The Health Magazine of the American Medical Association

Medical Library
AUG 19 1941

HYGEIA

Cracking Up Under the Strain! see page 684

SEPTEMBER · 1941 · 25c

DIFFERENCES IN FACE POWDERS

By CARL WEEKS, President of the Armand Company, Des Moines, Iowa

Although cosmetics represent a highly commercialized development the industry remains one of the few large manufacturing enterprises wherein creative art and experience are prime assets. Give the same fine face powder materials to a dozen different cosmetic manufacturers and each of the finished face powders will probably be quite different from all the others. Perhaps one maker will have the knowledge of the art that enables him to combine the ingredients in the exact proportions, to adjust his colors so he has perfect shades, and will possess the supreme art of the perfumer to scent the powder so that its use is a pleasure. Certainly, it is true that there are real differences in face powders.

INGREDIENTS OF FACE POWDERS

The finest face powder cannot be made, however, without first acquiring the finest and purest ingredients. The cost of the finest materials is not so much more than the cost of inferior materials as to justify, in our opinion, the use of any but the finest available ingredients in any cosmetic preparation. This has been the belief and practice of the Armand Company for twenty-six years.

We have in the New Armand Face Powder the following ingredients: Zinc Oxide, USP; Titanium Dioxide; Magnesium Carbonate; Talc; certified cosmetic colors; inorganic color; and perfume oils. There are, it is true, numerous other things used in many face powders, such as the stearates of zinc and magnesium, kaolin or china clay, starches, precipitated chalk, etc. If formulas were printed on face powder boxes, as Armand believes they should be, there would likely be a rush to change formulas on the part of the powder makers who dilute their powders for reasons of cheapness and bulk.

To give you a definite idea as to how the New Armand Face Powder compares with the other leading face powders on the market, we employed two of the nation's leading research laboratories. Sixteen different nationally advertised face powders were thoroughly analyzed and compared. All the face powders were found to be free from heavy metals. They were all neutral. One contained starch. All powders except Armand contained stearate. Another very important difference was in the purity of talc and the fineness and uniformity of particle size.

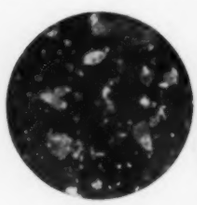


FIG. 1

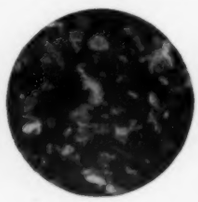


FIG. 2

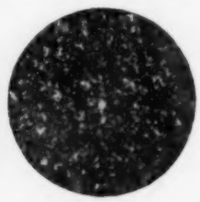


FIG. 3

Two of the nationally advertised brands of face powder contained tremolite—one brand as much as fifty per cent. Others varied greatly in particle size. Figure 1 is a microphotograph of an average face powder. Figure 2 shows a powder composed of fifty per cent tremolite. The analysis proved (Figure 3) that the New Armand Face Powder has the finest and most uniform particle size of all the face powders tested. This is due to two factors.

First, the unique quality of the Armand talc. The Armand Company controls its supply of talc. The talc from this mine is free from lime, iron, and tremolite. We believe Armand has access to the finest deposit of talc yet discovered.

Second, the exclusive grinding process of the New Armand Face Powder insures a much finer and more uniform particle size. This technique is the result of twenty-six years of experience in manufacturing face powder.

Since talc is the basic ingredient in every well known face powder we believe the above facts have real merit. Talc gives "slip" and smoothness to face powder.

PATCH TESTS ASSURE FREEDOM FROM COMMON ALLERGENIC IRRITANTS

In proportion to the quantity of cosmetics used, skin diseases arising from this cause are not alarmingly frequent. However, every busy dermatologist observes one or more cases a week of some condition resulting from cosmetics and doctors, generally, are giving more attention to cosmetic dermatoses.

Allergic irritations from face powders have been commonly caused by either rice starch, wheat starch, orris root, or perfumes—which often have allergenic properties. Until 1922 face powder makers generally used orris root as a means of carrying

FIG. 4

and holding the perfume materials in face and sachet powders. Then, Armand found that with the addition of a relatively non-allergenic fixative it was possible to use magnesium carbonate as the perfume carrier in place of orris root, and promptly advertised that fact to the medical profession. Armand powder does not now and never has contained starch.

Doctors, especially dermatologists, wish to know that the face powder they recommend not only contains the finest and purest ingredients obtainable but that the finished product itself is as pure, as nonirritant, and as near non-allergenic as it is possible to make cosmetics. In the course of perfecting the New Armand Face Powder we wanted to know the same thing. So we employed the services of a nationally known dermatologist who conducted comprehensive patch tests (see Figure 4). Two thousand eight hundred and eight tests (including tests on the New Armand Blended Face Cream) were made on women of varying ages and complexions. Each ingredient was kept in contact with the skin for seventy-two hours by means of adhesive patches. Not one skin irritation appeared. It is therefore our belief, and the belief of the dermatologist who made these tests, that the New Armand Face Powder is as near non-allergenic as it is possible to make it.

STANDARDS FOR THE IDEAL FACE POWDER

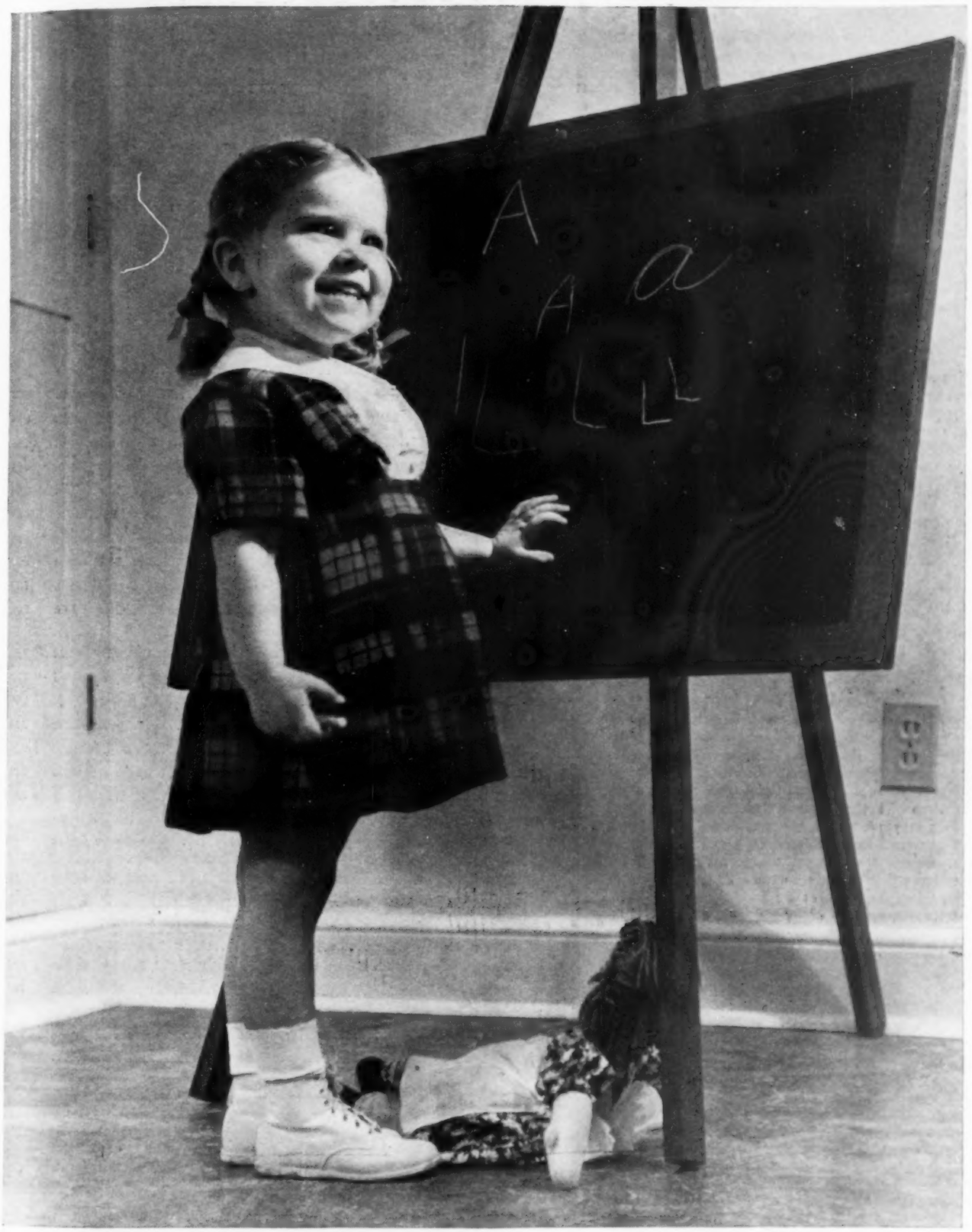
We believe that doctors and laymen alike, especially millions of discriminating American women and the organized consumer groups, want a yardstick by which to measure the cosmetic value of a face powder regardless of the package it comes in or whether it is priced at 50c or $5.00 a box. Armand, as one of America's oldest manufacturers of fine cosmetics, suggests the following standards by which to judge fine face powder. The ideal face powder contains only the finest ingredients. Every ingredient has been patch tested for purity from common allergens. The basic ingredient is talc that is free from iron, lime, and tremolite. It possesses uniform fineness and softness. It spreads easily and adheres over a prolonged period. It is available in at least seven skilfully adjusted basic shades. It is neutral. This ideal face powder contains no heavy metals, starches, or stearates.

TRY THIS SIMPLE FACE POWDER TEST

Take a glass of water. Drop into it a pinch of any one of the nationally known face powders. Stir. If the powder mixes with the water then it possesses what Armand believes is the one essential requirement of fine face powder—it can be washed off the face with plain water. A cosmetic that mixes with water, water will remove—and this fact should be satisfying to those who have feared the so-called "cosmetic skin."

SPECIAL OFFER

Send for Armand's Magic Shade Kit for testing face powder shades on your face. Includes your personal Magic Shade Chart . . . eight glorious shades of the New Armand Face Powder . . . purse-size container of the New Armand Blended Face Cream. Send 10c to Armand Company, Des Moines, Iowa.



BABIES SUPERVISED BY PHYSICIANS ARE BETTER BABIES

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FORECAST

A bright spot in an otherwise discouraging picture is afforded by the strong probability that the current condition of our teeth is a manifestation of something that is not—and need not be—a permanent attribute of the human race. All about us we see civilized human beings suffering from caries, pyorrhea, malocclusion and other dental ills. We also see the dentally superior peoples being dragged into the net of civilization to lose their fine teeth almost immediately.

It is natural that we should throw up our hands in despair and pronounce the coming extinction of human teeth inevitable, as many prophets of doom have done. But read "Why Are We Losing Our Teeth?" by Peter J. Brekhus, D.D.S., in the October issue.

If that "perfect 36" has become an imperfect 46, if your waist is larger than your chest, if that former trim figure lies buried beneath rolls of fat, if exercise has no more appeal and your favorite indoor sport is eating, if you have stopped growing at the top but are still enlarging in the middle, then the reducing claims made for elastic belts and girdles may attract you—if they have not already done so.

In "Girth Control," Fred W. Norris, M.D., exposes the fantastic reducing claims made for these garments—as well as for massaging devices—for which thousands of American people are uselessly spending millions of dollars each year.

High school students everywhere are thinking about the kinds of work they will be doing when they have completed their education. Most of them are now planning to use their classroom experiences and knowledges as actual training for specific occupations. The books these students read, the questions they ask their teachers or advisors, the topics they discuss among themselves, even their part-time or summer try-out work experiences are pertinent evidence that they are continuously seeking help in preparing for their life work.

However, there are few high school students who give thought to the fact that the actual state of their adolescent health has any great vocational value, even for future benefit. Next month, read the suggestions for classroom study by Dorothy J. Kelley, based on "The Job's Yours," appearing on page 696 of this issue.

To many people the coming of autumn is synonomous with the return and repitition of the "common cold." There are thousands of households in every large city in which, during the winter months, the children particularly are practically never free from sneezing, running noses and coughs. These reactions usually begin during late October when the chilly weather sets in and last until late spring when the temperatures again become agreeable.

Next month, Herman M. Jahr, M.D., explains "Your Child's Colds."

HYGEIA

THE HEALTH MAGAZINE

Published and copyrighted, 1941, by the American Medical Association. Edited by Morris Fishbein, M.D.

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HYGEIA, The Health Magazine, is published monthly by the American Medical Association, 535 N. Dearborn Street, Chicago, Ill. Yearly subscription price, $2.50; for foreign postage add 75 cents. Single copies, 25 cents. Volume 19, Number 9. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103 Act of October 3, 1917, authorized March 21, 1923. Printed in U. S. A.

Unsolicited manuscripts will be considered by the Editor but must be accompanied by a stamped self addressed envelop to insure return if rejected. Manuscripts should be typewritten, double-spaced, and the original, not the carbon copy submitted. All rights reserved.

What can a man believe in?

WHY do we print a picture of a boy and his dog?

It is to remind you that in this changing world there are some things that never change. Things such as the loyalty and devotion of a boy and dog to each other.

A trivial bit of sentiment? Not at all. In fact, it emphasizes a great truth. Basic human nature never changes.

Have such concepts as *home, mother, children,* lost their meaning?

Faith, character, ideals—are these mere words?

Temporarily the old values may seem to be out the window. Actually, they are as unchanging as the Pyramids.

Business, too, has traditions that stand like a rock. Traditions such as believing that the priceless ingredient of every product is the honor and integrity of its maker.

Every Squibb product—whether made especially for prescription by the medical profession or for proper everyday use in the home—bears an individual control number. It means that each detail in the product's making has been checked against Squibb's high standards and recorded under that number at the Squibb Laboratories. Look for the name and control number when you buy. You can believe in Squibb.

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"The Adcomber"

looks at Hygeia ads

AND NOW—"the blanket with a brain"! Warms the bed all over . . . keeps you just right in any weather . . . eliminates heavy "extra covers." And why this marvel blanket? IT'S ELECTRIC! See page 680.

• • •

For comfort and lovely contour during the maternity period—have you ever seen the equal of the "IT" Bra? In the picture on page 764, note the separately adjustable cups—to assure comfort and prevent cutting or binding. IDEAL!

• • •

We're telling you, it's a question of flavor . . . National Biscuit Bran makes a delicious breakfast! Besides that, it helps protect against sluggishness, and supplies you with valuable vitamins. Remember the package? (As shown on page 743.)

• • •

If the shoe pinches, you and I can kick—BUT WHAT ABOUT BABY? Wee Walker shoes are flexible, roomy, correctly shaped, yet very low in price! They'll help you protect your baby from misfortunes like that pictured in the X-Ray, page 757.

• • •

Two new menstrual education books for girls in school or camp—plus a set of anatomy charts and Teaching Outline prepared by a teacher! Here's a notable offering to teachers by the makers of Modess—page 725. Cost? Not one cent!

• • •

If you like comics, you'll want to look over the sketches labelled "Famous Words of Advice," page 733. (Postum says it with pictures . . . and also with SATISFACTION. Tried it lately?)

• • •

For a delicious Wheaties breakfast for a family of three—send one 3c stamp!

What a modest price for this "Breakfast of Champions," made of 100% whole wheat fortified to full grain level with important vitamins. Read what else that stamp brings you . . . inside back cover.

• • •

When a Famous Floating soap breaks its own high record for mildness—THAT'S NEWS! . . . Read the NEWS about Ivory, page 681. (Like the new name?)

• • •

Toddlers love Carnation too. Or did you know? Best thing about this nourishing food is the many tempting ways you can offer it to young graduates from bottle formulas. You can get a lot of helpful recipes for the asking, as per the offer on page 735.

THE ADCOMBER.

Who's Who IN HYGEIA

CARL G. HARTMAN, Ph.D., author of "Sex Education for the Woman at Menopause," page 699, was born in Iowa. After trying a number of professions in various parts of the country, he is returning to the Middle West to take charge of the department of zoology at the University of Illinois, Urbana. At 18 he hired out to a farmer in Texas and raised a crop of cotton, corn, pigs and honey, when the local school board asked him to teach in the "little red school house on the hill." After attending the University of Texas for four years, he was elected county superintendent of schools in Austin, Tex. He visited, in this capacity, the county's 150 schools, both white and Negro. This, he writes, was a great experience in the study of human nature, but he still carried on a continuous but desultory interest in natural history, his chief enthusiasm.

After three years as professor in biology in the Sam Houston State Teachers College, he became convinced that his father's strictures on his scientific attainments were correct, for he had said that although a college professor, he was "a one-eyed king among the blind." For this reason he accepted an instructorship at the University of Texas in 1912 in order to "learn his subject." In the next thirteen years he worked out the life history of the opossum, and with the aid of his wife solved the enigma of how the newborn opossum reaches the mother's pouch.

Since 1925, in the laboratories of the Carnegie Institution of Washington, Department of Embryology, he has continued the study of the physiology of reproduction, working with the monkey, the most favorable animal for the study of the menstrual process. After sixteen years in this field he is leaving it, he feels, without knowing more about the essential cause of menstruation than when he began. He has "discovered the cause of menstruation twice" but doubts that the final answer will be forthcoming in the near future.

Maintaining his original interest in natural history, he and his four children have made insect photography a hobby, photographing particularly solitary wasps during summer vacations. They have captured them on their films, both still and moving, in black and white, and in color. His chief hobby, however, is keeping ahead of his contemporaries in modern developments all down the line, an impossible task, he says.

RUTH E. BECKEY, Ph.D., author of the current series of articles on speech education was born in Linwood, Kan., in 1906. For the first twenty years she lived on a farm, doing everything from digging potatoes to shocking wheat. Raising purebred Buff Orpington chickens was her specialty as a young girl. Her particular hobby at the present time is puppetry.

Dr. Beckey received her bachelor of science degree in education from Kansas State Teachers College, Emporia, Kan., in 1929; her master's degree, with a major in speech, from the University of Iowa in 1936; and her Ph.D., with special emphasis on speech correction and psychology, from the University of Southern California, Los Angeles, in 1940.

She has taught school since 1924—country school, high school and for the past few years in colleges and universities. At the present time she is director of the speech clinic work at Ohio University, Athens. She has taught college classes in Washington, Iowa, Ne-

braska and Ohio, and has also had experience in clinical speech work in various hospitals.

Her travels have been limited to the United States and to a small part of Canada. However, there are very few sections of the United States which she has not seen at one time or another.

Incidentally, the picture illustrating her article, "The Children's Speech Clinic," page 753, shows Dr. Beckey "in action."

EDGAR V. ALLEN, M.D., received his B.S. and M.A. degrees from the University of Nebraska in 1923 and his M.D. from the same university in 1925. From the University of Minnesota he obtained his M.S. in medicine in 1932. He was a fellow of the Mayo Foundation for Medical Education and Research, 1925-1928, and a fellow of the National Research Council for study in Munich and London, 1929-1930.

Dr. Allen is associate professor of medicine, University of Minnesota, Graduate School of Medicine (Mayo Foundation) at the present time and chief of section in the Division of Medicine, Mayo Clinic.

He is a member of various medical societies and author of many medical papers. His chief hobbies are early American history, hunting and fishing. His article, " 'Cracking Up' Under the Strain" appears on page 684.

SULFANILAMIDE FOR PERITONITIS

Placing sulfanilamide in the abdominal cavity as an effective means of combating peritonitis following surgical removal of the appendix is endorsed by J. E. Thompson, J. A. Brabson and J. M. Walker, New York, in *Surgery, Gynecology and Obstetrics.*

During 1940 the three men administered sulfanilamide in the abdomens of a large group of patients in whom there was real or suspected infection of the peritoneum (membrane lining the abdominal cavity). There were no deaths as compared with a mortality rate of 2.7 per cent in a group of patients with similar symptoms not treated with sulfanilamide during the previous five years. Complications seemed less frequent and, when present, less severe, they say, and the drug had no severe toxic or poisonous effects.

. . . more than

3800

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How do salad dressings differ from mayonnaise?

Does gelatin increase physical endurance?

Are sweets desirable for children?

What nutrients do mushrooms provide?

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Petal-soft your skin may be—and as needful of careful handling. Petal-fragrant you must keep it—especially in that treacherous underarm area, so malodorous when it goes untended...

To help keep these dainty qualities of your skin, Marcelle—for eight years distributors of Safe Cosmetics—now presents a new cream deodorant. EFFECTIVE because it contains aluminum sulphate. MILD because skillful cosmetic chemists have blended it of purest emollient ingredients. RELIABLE because it belongs to the Marcelle family of cosmetics—known to doctors and their patients everywhere.

Groom yourself with Marcelle's newest safeguard for loveliness. Protects from one to three days... Deals gently with dainty skins ... Helps keep you petal-fresh.

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LETTERS FROM *Readers*

Mussel Poisoning

To the Editor:

I have read with a good deal of interest your article on the subject of "Mussel Poisoning" in your August 1941 issue.

Your article states in part, "Shellfish poisoning is by no means of recent origin. It has been known and recognized in Europe for over one hundred years."

You may be interested to know that the Jewish people have been aware of this fact for thousands of years and shellfish has been banned under their dietary laws as far back as five thousand seven hundred years ago.

LEONARD JACOBS

New York City

Most shellfish obtained today are completely free from any infection. Our present knowledge of the habits of shellfish and of refrigeration makes them safe except under such conditions as are described in the article.—ED.

Sex Education for the Preschool Child

To the Editor:

The other day I happened to be in a local library and, as I so often do, picked up a copy of HYGEIA. This one was for May of this year, and contained the article on sex hygiene for the preschool age child, by Harold E. Jones and Katherine Read.

It has troubled me ever since, because so few people ever stop to think things out. They simply follow what other people have said, or what they happen to see in print, especially in a magazine like HYGEIA.

I have known many intelligent children of preschool age, and still know some, and I have always found that unless children were precocious along sex lines, they were never apt to be very curious about sex manifestations. The precocious child should of course be satisfied, and wisely guided along these lines, but I cannot see the wisdom of burdening the mind of a preschool age child with information on menstruation, for instance, or the exact process which causes a baby to grow.

Child minds are flexible things; they should be satisfied, of course, but also guided away from sex matters at this age, since they are too young to understand most exact explanations, or to cope with the knowledge as it is suggested here.

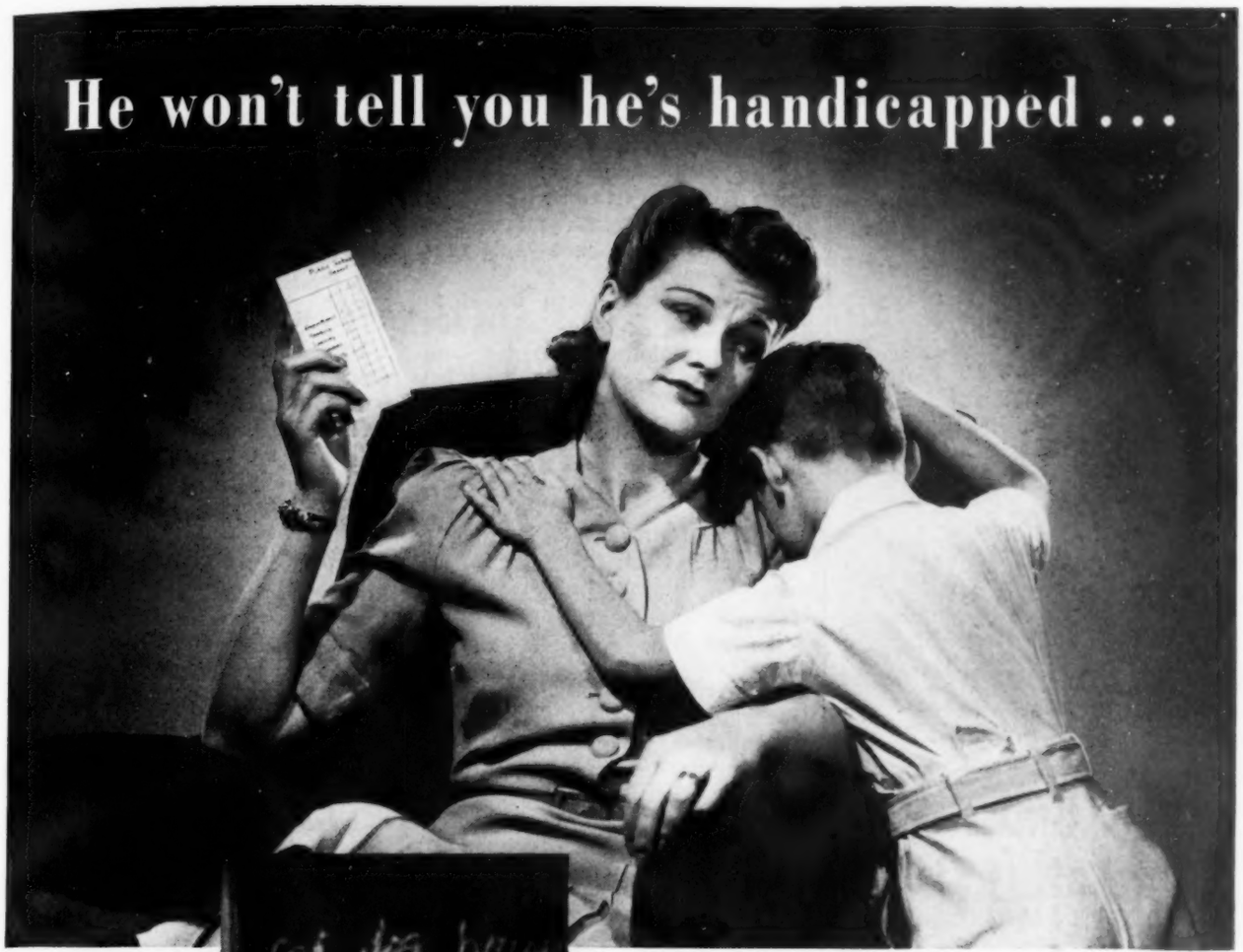
In a family where decent privacy in the bath room was observed, a child need never be puzzled or have to ask about the differences between his father's and mother's naked body and his own, or learn about menstruation, "as the child observes and asks about it."

Is not the coming of a new baby in many ways, "an act of God"? Could not the preschool age child truthfully be told that God caused the baby to grow in the mother? Is there not something more than sex, or a biologic explanation to the birth of a baby? I have had three, and I know that there is, definitely, a spiritual side. Perhaps the questioning child has prayed for a little brother or sister, as is so often the case.

To be sure, some may point out that without the father's act, the prayer would not have been answered, yet there are many childless marriages.

Nor have I ever found it wise to encourage conversations about sex between children, such as this article suggests. One family may be

He won't tell you he's handicapped . . .



. . . HE *doesn't know!*

If your child starts back to school with backward eyes, he starts with two strikes against him . . . and saddest of all, *he doesn't know!*

Marks may suffer, because problems on the blackboard are illegible. Lessons may be missed...his interest may lag...because what goes on before his eyes is confused. But he won't tell you—he has no way of knowing if his vision is good or faulty. He thinks things *really are* as he sees them.

Remember, Mother, his progress in school, in life...his health and happiness, his entire future is in your hands! Have his eyes examined. Only competent examination can tell whether or not he sees correctly. He *doesn't know*...but it's important that *you* find out.

Soft-Lite Lenses are made by Bausch & Lomb for the Soft-Lite Lens Co., Inc., New York, Toronto, London.

Where absorptive lenses are needed Soft-Lite Lenses are often prescribed for children as well as for adults to provide protection against glare and over-brightness. Delicately flesh-toned, they are inconspicuous.

Soft-Lite Lenses

General Electric Announces

THE BLANKET WITH A BRAIN

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A Major Contribution to Blanket Comfort!

Always before, you had to supply the heat to keep your body warm in bed. Now comes a blanket that automatically keeps you warm! Deep-napped, in your choice of 5 lovely colors, this General Electric Automatic Blanket not only produces warmth but automatically adjusts itself to room temperature changes.

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- You fall asleep faster in a warm bed.
- You are never cramped to avoid cold sheets. Blanket warms bed all over.
- You are never wakened to get extra covers. Blanket maintains warmth you select.
- You get fresh air without the burden of heavy covering.
- You save your bodily energy usually expended to keep the bed warm.

See this General Electric Automatic Blanket at your appliance or blanket dealer's. Or, write for descriptive leaflet to General Electric, Pioneer Products Section, Bridgeport, Conn.

GENERAL ELECTRIC

given to loose talk and actions, too. Should the children of that family be permitted to pass on to your child these wrong attitudes?

When one considers that it is usually the wrong kind of knowledge, gained under wrong conditions, that prompts the wish to talk about sex matters, in a young child, it would seem to be a dangerous habit for any child.

If all children were urged to bring home strange new words and questions to Mother or Daddy, and if those two were properly fortified with real love and concern for their children, plus some careful reading of some of the many fine books on this subject, they would find it an interesting and profitable experience for all concerned.

I am not writing this letter for the sake of argument, but in the real interests of little children whose best good should be more carefully considered.

Neither do I question the scientific knowledge of Harold E. Jones or Katherine Read, but it seems that their advice is based on theory alone, and that neither one has ever had a child of their own. If they are parents, they have "missed the bus."

MARY GREENLEAF BRANDT

Maplewood, N. J.

The March of Medicine

F. W. HARTMAN

To the Editor:

I wish to thank you for the excellent picture taken from my exhibit [at the American Medical Association convention] and published in the July 1941 HYGEIA, page 547. I would like, however, to enter a protest about changing my name to Samuel S. Harper and also about transferring me from the Henry Ford Hospital to the Mayo Clinic. Doubtless, Dr. Harper of the Mayo Clinic will appreciate this change less than I do. In any case, the method of desiccation in cellophane tubes as illustrated was developed at the Henry Ford Hospital and not at the Mayo Clinic.

F. W. HARTMAN, M.D.

Detroit, Mich.

Essentials of an Adequate Diet: I

To the Editor:

I have read your interesting article, "Essentials of an Adequate Diet," in the August issue of HYGEIA, and would greatly appreciate your referring me to some Government or private publication which lists the various foods by the food constituents, the mineral content and the vitamin values. I believe that, in view of the rapid development in knowledge of vitamins, such a publication should be of very recent date.

A. B. HORWITZ

Duluth, Minn.

This is the first of a series of articles discussing each dietary essential and the means of meeting it by the proper selection of foods. In this issue, page 727, Dr. Clouse discusses thiamine requirements.

Among the simpler and more popular of the recent textbooks on nutrition which contain tables of the vitamin values of foods are "Feeding the Family" by Mary Swartz Rose, 4th edition, Macmillan, 1940; and "Essentials of Nutrition" by Harry C. Sherman and Caroline Sherman Lanford, also published by Macmillan, 1940.

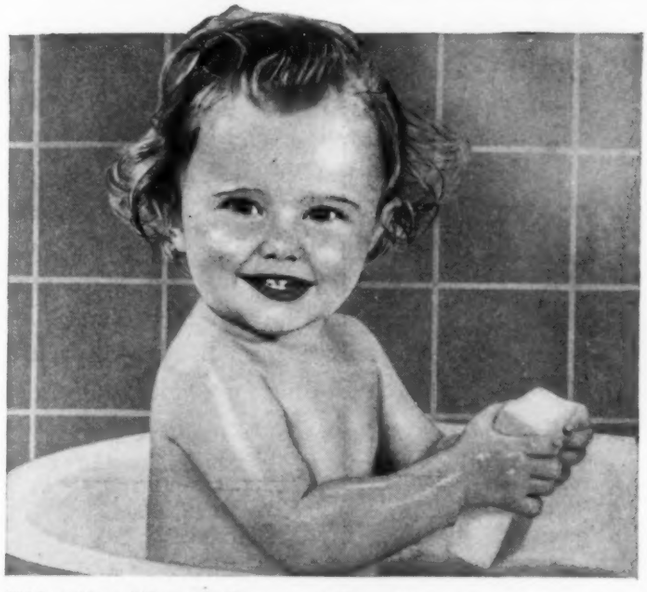
Two useful government publications on nutrition are the United States Department of Agriculture Circular No. 549, "Proximate Composition of American Food Materials," by Charlotte Chatfield and Georgian Adams, price 15 cents, Superintendent of Documents, Washington, D. C.; and "A Table of the Vitamin Content of Foods" by Lela E. Booher, Eva R. Hartzler and Rosemary L. Marsh, free, Bureau of Home Economics, United States Department of Agriculture.

Another helpful publication is the booklet entitled "Food Values of Portions Commonly Used" by Anna dePlanter Bowes and C. F. Church, 3rd edition, price $1, obtainable from Anna dePlanter Bowes, Philadelphia Child Health Society, 311 S. Juniper St., Philadelphia, Pa.

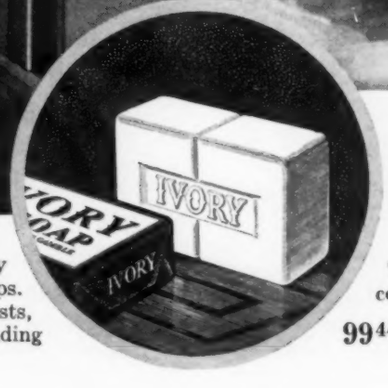
—ED.

NEW "*Velvet-Suds*" IVORY SOAP MILDER THAN EVER BEFORE!

New High Standard of Mildness Supported by Hundreds of Skin Patch Tests!



Milder than 42 examples of castile soap. A recent report on 44 examples of imported castile soaps, purchased at random in 6 cities, disclosed that 42 of these samples showed definite evidence of decomposition and rancidity. These soaps are far below the high standard of Ivory mildness.



Milder than 10 leading toilet soaps. New Ivory is not only milder than ever before. By test, it is milder than 10 leading toilet soaps. This was proved in hundreds of skin patch tests, testing with a technique approved by leading dermatologists.

Proved milder than 10 leading toilet soaps

Technique approved by leading dermatologists

In 1879 when Ivory floated into American homes there had never been a soap with such uniform purity and mildness.

Today there is a New Ivory Soap. It's actually milder than ever before! . . . Kinder than ever to sensitive skins.

New "Velvet-Suds" Ivory Soap is whiter . . . handsomer, with richer, creamier lather that's wonderful for baths. It gives quicker, easier suds . . . even in hard water . . . extra-gentle suds that are kind to hands in the dishpan.

Always America's favorite soap, now New "Velvet-Suds" Ivory is better than ever for everything!

Milder than any other widely advertised white floating soap. It reaffirms a sixty-two-year-old promise of Ivory's famous mildness and purity. New Ivory is a handsomer, whiter cake with richer, creamier lather.

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Sabotage of Science

A BILL IS PENDING in Congress, and agitation is being carried on in several communities, intended to curtail or abolish the use of animals, particularly dogs, in scientific laboratories. For many years the march of biologic and medical science has been impeded by emotionalists who call themselves anti-vivisectionists. The words mean to be against vivisection. Vivisection means cutting while alive. The name is chosen shrewdly, because the idea of cutting animals while they live is not, to any human being, a pleasant one. For the unthinking opposition to experiment on animals would seem a laudable humanitarian attitude.

The anti-vivisectionists contend that the use of animals for experimental purposes in the laboratory is cruel and inhuman, and that it has not contributed anything to medical progress which could not equally well have been ascertained through observation on human beings. Sometimes they insist that the final experiment must always be on the human being, and therefore all experiments on animals are useless anyway.

Metropolitan newspapers, not edited by doctors or scientists, have expressed themselves on these issues.

The anti-vivisectionist propaganda has been kept alive by what Howard Vincent O'Brien of the *Chicago Daily News* designated as "emotional money." Support comes from non-scientific persons, mostly those engaged in the arts and literature. Actors, both stage and cinema, operatic singers, novelists and poets are numerous among those who have expressed their aversion to the use of animals for experimental purposes. Women predominate. The clergy of all denominations have, with few exceptions, recognized the scientific necessity for the use of animals in legitimate experimentation. "If," says O'Brien, "the antivivisectionists were content to preach their sentiment, sense would have little to fear from them. Unfortunately for sense . . . people of wealth, whose thinking is dominated by their emotions, are constantly bequeathing large sums to . . . antivivisection."

The anti-vivisectionists have a right to their opinions. They have a right to cite facts in support of their position. But they depart constantly from the facts. The doctors whom they quote in support of their position are either men without scientific standing, or men who lived so long ago that their opinions have no validity in a modern setting. The anti-vivisectionists commonly present quotations without date or proper verification. Many of these quotations have been traced to their original context and have been found so garbled or mutilated that they no longer represent the true sense of the writer's words when quoted in full. Such methods, which smack of intellectual dishonesty, cast doubt on the validity of all the statements emanating from these sources.

The anti-vivisectionists deny that experimentation has contributed to medical progress. The whole history of modern medicine denies their claim. The *Chicago Tribune,* in an editorial reprinted below, has summarized this phase of the anti-vivisectionist claims admirably, and fully exposed their falsity. Their most brazen display of effrontery, however, is the claim that the last experiment must always be on the human being. When perfectly harmless observations have, on occasion, been made on human beings, these same emotionalists screech about "human vivisection."

The anti-vivisectionists have never had any important success in imposing their warped ideas on state legislatures or on Congress,

though they have tried again and again. Their movement remains alive not because of any inherent merit, but by virtue of the "emotional money" bequeathed by misguided sentimentalists. This money furnishes the sinews of war. The remote possibility that scientific research might somewhere, somehow be crippled by a fluke success on the part of the antivivisectionists requires scientists to be vigilant and to waste valuable time and effort repeatedly denying the outworn lies peddled by the anti-vivisectionists.

All this is bad enough in normal times. In times of national emergency, when medical and biologic sciences form an important factor in the national defense, sabotage of science may prove to be more disastrous than sabotage of industrial or military effort.

—*W. W. Bauer, M.D.*

Recent agitation concerning animal experimentation in the Hearst newspapers apparently stimulated the following editorial in the Chicago TRIBUNE, July 15:

SPEAKING OF HORRORS

The most astonishing thing about the self-styled antivivisectionists is their pertinacity in a cause that is as thoroughly discredited as it is bad. They have not imposed their particular brand of insanity on a civilized community in years, yet they keep coming up for more.

Their most recent incursion has been at Peoria. The members of the city council, most of whom, by the law of averages, must have some member of their families who is alive today only because of medical progress through animal experimentation, have been subjected to the usual fictions regarding the horrors to be found in medical laboratories.

A recent dispatch noted that Dr. Anton J. Carlson had landed, and no doubt he has the situation in hand by now. The Peoria affair may safely be left to the doughty doctor and the good sense of the town's own people. It is a pity, however, that men like Dr. Carlson must, from time to time, drop their work against death and human misery to refute once again the time-frayed arguments of ignorance and perverted sentimentality.

Vivisection is an intentionally misleading word. The majority of experimental animals are not subjected to surgery. Those that are are almost invariably placed under a local or general anesthetic and are painlessly destroyed thereafter—the same fate experimental dogs would meet if they were left in the pounds from which medical laboratories obtain them.

Every medical or other scientific laboratory has the strictest rules, rigidly enforced, to prevent abuse of or cruelty to experimental animals. As scientists have frequently pointed out, the ordinary operations of husbandry, performed without anesthesia, subject animals to more pain in any single day than they have suffered in a century of laboratory experimentation.

The horrors that the antivivisectionists portray in experimental laboratories simply do not exist. But since they insist on following this theme of cruelty and agony, here are a few truthful instances—and they could be multiplied, literally, by millions—to which these people might give some attention.

Perhaps they would like to watch a golden haired child of 5 starve to death within a few months, in spite of the most tender care by parents and physicians. That was the almost inevitable fate of child diabetics until the discovery of insulin two decades ago. Insulin was discovered through experiments on dogs. The hundreds of thousands of diabetics whom it enables to lead normal lives are able to take it with safety only because doses are regularly standardized by experiments on other animals.

Or perhaps they would rather see the trapped agony in the eyes of the father of a family who had just been told that he had Addison's disease, an incurable malady that led to death in a short time. Addison's disease is no longer necessarily fatal. It is controlled by cortin, a drug found by experiments on dogs.

Or these self-styled apostles of gentleness might take their stand beside the parents who watch a child stricken with infantile paralysis, not knowing whether the disease will leave the child crippled in mind or body. The convalescent serum that has greatly reduced the fatality and crippling effects of this disease was developed by animal experimentation, which is being continued in the hope of finding a complete cure.

Perhaps they would like to watch the progress of a shambling hulk with a mind arrested in childhood by meningitis. This is one of the many diseases cured by the "miracle drugs" sulfanilamide and its chemical allies. The world would not have them if it had not been for animal experimentation.

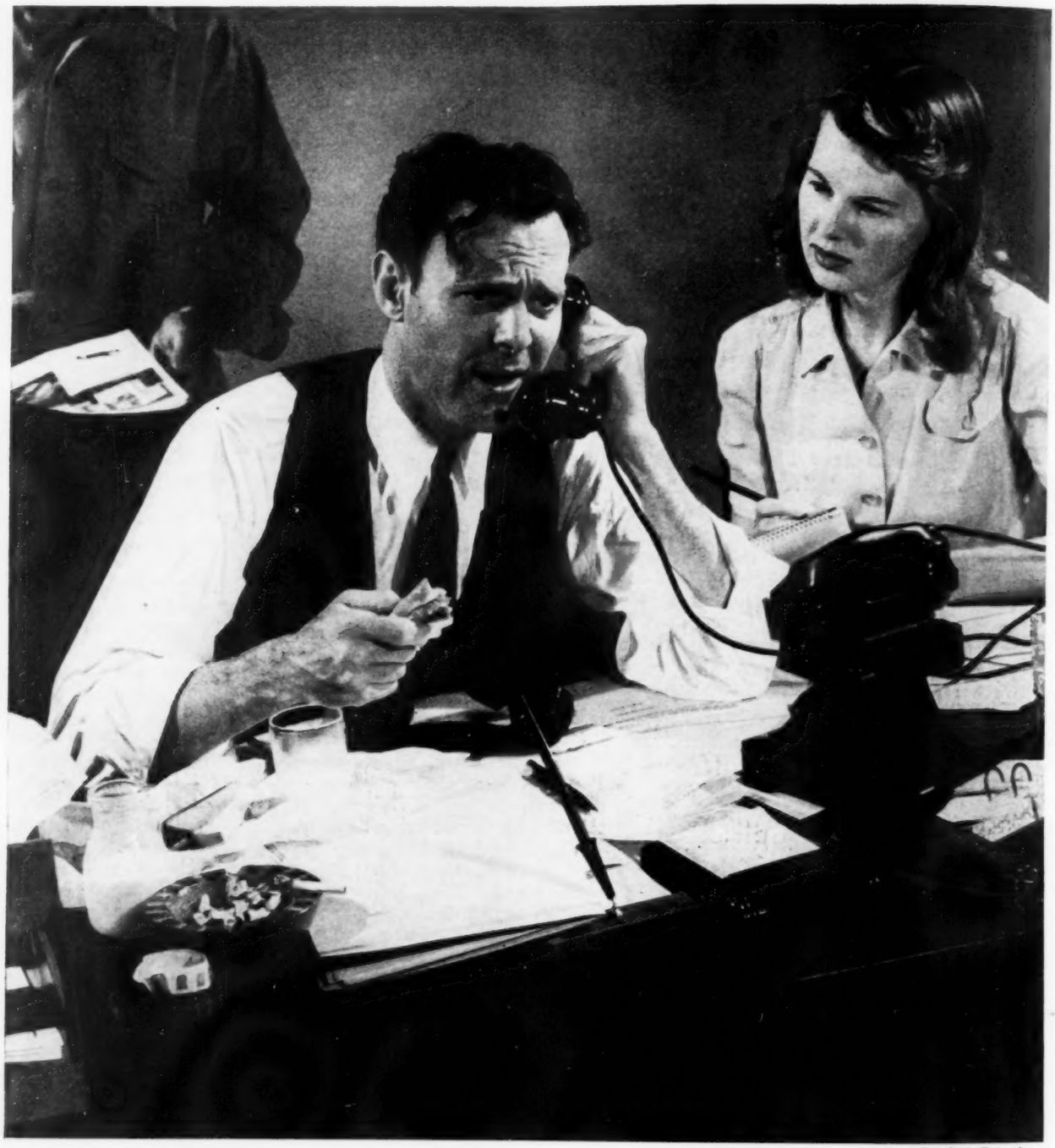
Most people have seen a copy of Sir Luke Fildes' famous painting "The Doctor." It shows Queen Victoria's own physician sitting helplessly by in a humble cottage as a little girl chokes her life away with diphtheria. Such scenes were a commonplace in the childhood of the present generation of adults. They are rare today because of the antitoxin and the toxoid immunizing agents prepared in the bodies of horses and tested on other experimental animals.

The horrors of cancer need no elaboration. The search for the agents that cause it depends largely on the use of experimental animals. If the antivivisectionists had their way, that curse would remain on mankind forever.

The list can be extended almost indefinitely. The prevention of smallpox, yellow fever, typhus and lockjaw, the treatment of pneumonia, syphilis, scarlet fever, anemia, bubonic plague, gallbladder ailments and gastric ulcer, new technics in surgery, the whole range of vitamins and hormones, the marvelous anesthetic ethylene—all these and may other medical discoveries owe their debt to animal experimentation.

If the antivivisectionists are not moved by human suffering, perhaps they would rather watch a shivering, half paralyzed dog that has been stricken by distemper. The vaccines and serums that are 99 per cent effective in preventing or curing distemper were obtained by experiments on dogs. Pasteur experimented on dogs to develop the vaccine that saves both them and men from otherwise certain death from rabies. Experiments on dogs developed tetrachlorethylene as a cure for the hookworm that formerly killed so many pets. It has since been found useful in treating hookworm in humans.

Where does the cruelty lie—in the scientists who humanely use animals to end human suffering, or with the people who by stopping animal experimentation would deny humanity an indispensable weapon against the scourges that still beset it?



Stephen Deutch

"CRACKING UP" under

the strain

By EDGAR V. ALLEN

A "BUSINESS EXECUTIVE"—defined in the broadest sense—includes all those who are charged with the administration of business. But there are many more business executives other than the bankers, merchants, industrialists and financiers who are commonly thought of as "business executives." The definition of the term may be further clarified by contrasts. The bookkeeper isn't a business executive, but the treasurer of a company is; the clerk isn't, but the owner of the store is; the typesetter isn't but the editor of a newspaper is; the secretary isn't, but the physician may be an executive. In short, a business executive is one who has responsibilities beyond his own activities and those of his family.

In caricature and in comedy the business executive is frequently portrayed as big at the waist, bald on the head, and soft in the heart for pulchritudinous females. This is too superficial a characterization. Physicians are much more interested in the facts that too frequently the executive's blood pressure is high, his arteries are hard and his temper is short. He is commonly irritable, nervous and melancholic. His brain is weary, his muscles are tired, his bowels are constipated and his stomach is acid. All too frequently, he lies mumbling and muttering in a hospital bed, panting his life away as a result of high blood pressure and hardening of the arteries. When he stumbles and falls from apoplexy, or after a shudderingly severe episode of cardiac pain, he is hurried off to the sleep from which there is no awakening. These are inevitable ends, for in spite of man's eternal struggle for life and for longer life, he cannot avoid death. But life might have been fuller and death delayed.

One should not be misled by statistics which indicate the increasing average span of life. This achievement has been accomplished largely by a sharply decreased rate of infant mortality and not by substantial increases in the life expectancy of adult persons. In the period from 1900 to 1930 the average expectancy of life at birth for white males increased approximately eleven years, but in the same period the average expectancy of life of white males aged 40 years increased only a year and a half. Moreover, there is much more to life than the length of it and much more to health than the absence of organic disease.

Food

Almost every one eats too much. There is definite evidence that food may harm man. In the struggle of life the race is not to the swift but to the thin. Of each ten men of normal weight at 30 years of age, three live fifty years longer. Of each ten overweight men at 30 years of age, only one lives fifty years longer. Obesity predisposes to diabetes and the United States has the highest per capita incidence of diabetes in the world. Truly, man may dig his grave with his teeth.

A particular manner in which food is an occupational hazard to the business executive is seen in the observation that he usually eats more than his body needs. This commonly results in obesity, a condition which is in no place better demonstrated than in the locker room of a golf club. Observation there might persuade one that prosperity and obesity run hand in hand, and indeed they frequently do. Of course, quackery is rampant in this field of diet but, aside from the recommendation that the business executive avoid obesity, little which is specific can be recommended concerning his food provided his diet is a balanced one. There is some evidence that a disturbed utilization by the body of milk and its products, of eggs and animal fats, is responsible in some degree for the changes in the blood vessels leading to hardening of the arteries (atherosclerosis). Conclusions concerning this subject are definitely contested. However, a conservative attitude is that less carbohydrate and less fat in the diet would do no harm and perhaps do much good.

An occasional period of fasting for two to three days benefits many people. They are spiritually elevated, as they are by a lovely symphony or by a beautiful poem or by some unforgettable bit of prose. Interestingly, man and the animals under his domination are the only animals that eat by the clock. Man feels he must eat when meals are served, a fallacy kept alive by mothers, who force food down the unwilling gullets of their "unhungry" chil-

dren. If man must eat at mealtime, he should eat at mealtime only when he is hungry and only sufficiently to barely satisfy that hunger.

Smoking

Much is now known about the effects of the smoking of tobacco on the human body. Smoking impairs circulation in the skin of the peripheral parts by causing arteriolar constriction. This can be easily demonstrated by suitable thermometric studies of the skin in which it is indicated that as a result of smoking the temperature of the skin may decrease several degrees. Furthermore, tobacco smoking causes diminution in the size of the small arteries in the retinas. Excessive smoking may cause dimness of vision and may also increase the blood pressure of many patients. Other studies indicate that persons who smoke much have nicotine in their blood and in their urine. They are, in fact, more or less chronically poisoned by nicotine.

Aside from the fact that nicotine is found in the blood and urine of those who smoke, smoking causes transient physiologic disturbances which disappear promptly on cessation of smoking. One cannot conclude from these studies that the repeated smoking of tobacco produces organic disease, but such is not an improbability, since repeated injections of epinephrine may cause hardening of the arteries and repeated injections of choline may cause hardening of the coronary arteries of animals.

It is difficult to prove conclusively that smoking shortens life, although the studies of Pearl would seem to indicate that this is true. He found that of 100,000 nonsmokers first investigated when they were 30 years old, 80,000 were alive twenty-five years later; of 100,000 heavy smokers first investigated at 30 years of age, only 60,000 were alive twenty-five years later. On superficial examination the conclusion is inescapable: smoking accounted for the deaths of 20,000 persons. The evidence, however, may be questioned at once. Does tobacco smoking shorten life or do persons predestined to have relatively short lives by virtue of heredity, disposition, stresses and strains of life, and so forth, smoke more because of their peculiar dispositions? There is no answer. It seems true that excessive tobacco smoking benefits no one and perhaps harms many. It is a habit which could well be dispensed with as a health measure. Most all who have been heavy smokers of tobacco and who have discontinued smoking relate that an increased sensation of good health results. Others have directly opposite opinions.

The reason that the smoking of tobacco seems a hazard of greater magnitude for the business executive than for other persons is that the business executive frequently uses tobacco excessively. He does so largely because of the nervous tension under which he works and because of the need which he feels to do something with his hands.

Alcohol

There is no acceptable evidence that alcohol used in moderation does any harm to the body. However, Pearl's studies indicate that the excessive use of alcohol seems to shorten life, as excessive smoking seems to shorten it. As far as the business executive is concerned, interest is not in the directly detrimental effects of moderate amounts of alcohol on the human body, but in the observation that the business executive is so frequently harassed, depressed and oppressed in an environment incorrectly called "civilization" that he feels the need of alcohol to lessen his muscular fatigue and "brain fag," to loosen and brighten his pessimistic tongue and to lift him out of the slough of despond. Were the business executive not unhappy, unduly fatigued or dissatisfied with life, he would have little or no need for alcohol. Usually, alcohol is used in an attempt to escape situations with which the person who uses it feels unable to cope, or to bring some cheer and lack of concern into a life which encompasses too little cheer and too much anxiety. In other words, the user of alcohol ordinarily seeks temporary forgetfulness of his cares.

"The Strenuous Life"

There is little doubt that in recent decades there has been a change in emotional attitude. As Houston has pointed out, there has been an abandonment of the conception of the "good life" as being a balanced life, a life in which anything too much—anything in excess—was to be shunned, a life in which order, measure, proportion were emphasized. In other words, there has been entirely too much of that which is embodied in the phrase of Theodore Roosevelt: "the strenuous life." Parenthetically, it is possible that Theodore Roosevelt's pursuit of "the strenuous life" *(Continued on page 732)*

DIABETES and FEET

The blood vessels of the legs and feet of diabetic patients have a tendency to lose their normal elasticity and become thickened, sometimes brittle, and in some cases completely or partially blocked by a thrombus or clotting of the blood

By SAUL S. SAMUELS

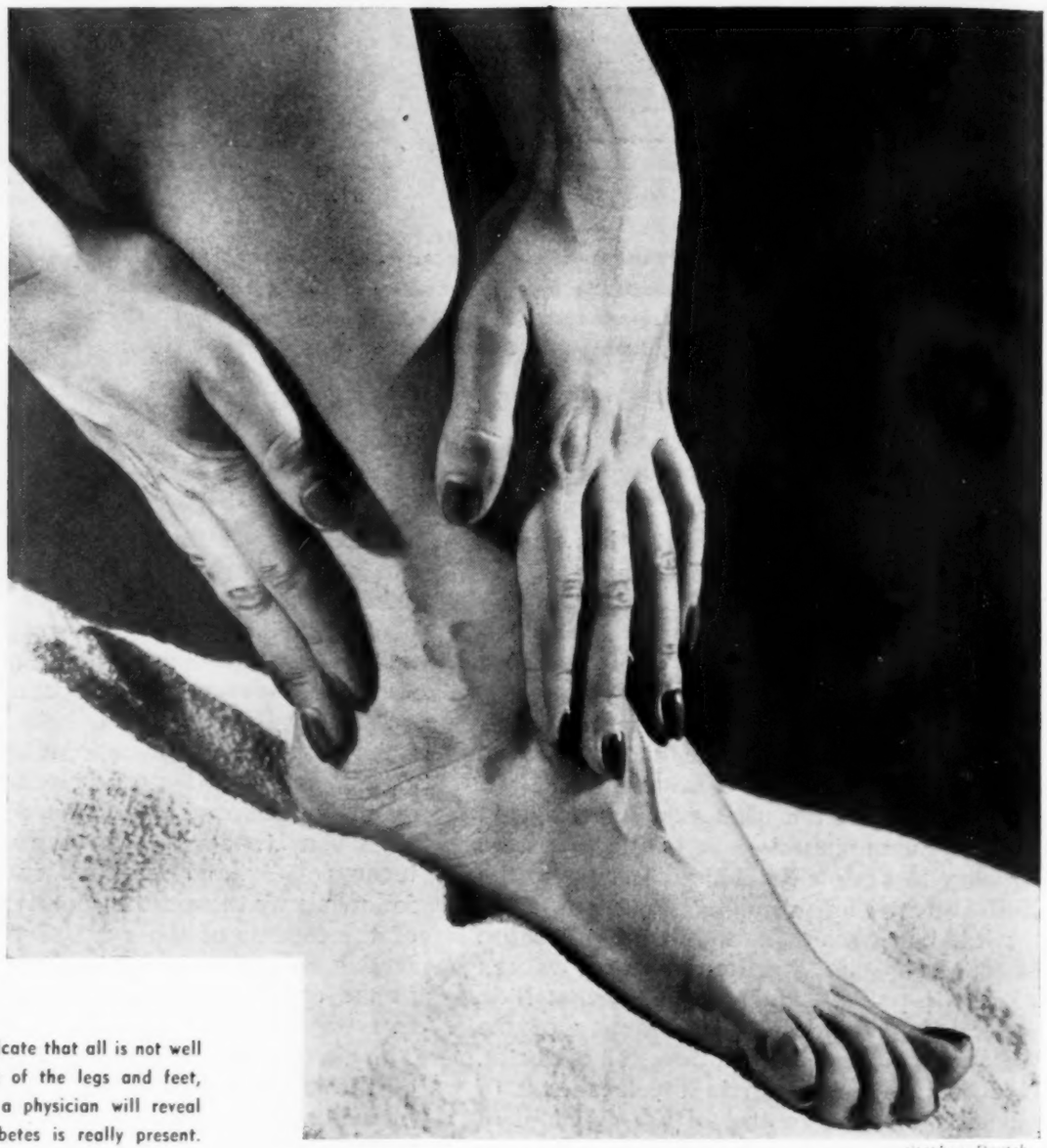
THE TREATMENT of diabetes has undergone such revolutionary changes in the past fifteen years—as compared to the methods in use before the days of insulin—that an entirely new outlook on the disease has become necessary.

Previously, the greatest attention was focused on the diet and the only means of controlling diabetes was a restriction of the patient's consumption of starches and sugars. Various other manipulations of the diet were necessary to keep the amount of sugar in the blood at a low level and to prevent its overflow into the urine. This difficult procedure consumed most of the time of the physician and of the patient, with the result that little consideration could be given to any of the other aspects or complications of diabetes. Since the use of insulin in the treatment of diabetes, however, control of the diet and of the proper dosage of insulin still demand considerable attention. It is now known that the diabetic patient of middle age and older is particularly prone to the development of trouble in the arteries of the legs and feet. For some reason—yet unknown—these tubes which carry the blood have a tendency to lose their normal elasticity and become thickened, sometimes brittle, and in some cases completely or partially blocked by tough rubbery material known as a thrombus or blood clot. This is not ordinarily a sudden happening; it is usually a gradual process which, if neglected, may eventually terminate in the serious condition known as gangrene. The progressive blockage in the arterial tubes of the legs may eventually proceed to such a point that either not enough blood gets through or that none at all is carried to the feet. If this should happen the nourishment which is carried by the blood is also cut off with the result that the involved parts die, become black and thus begins the gangrenous condition. Gangrene may involve part of a toe or may effect several toes or part of the foot.

By acquainting the diabetic patient with some of the early symptoms of his complication, he can intelligently tell his physician of their occurrence and the proper precautions can be taken. Of these signals of disturbance of the circulation in the feet, the following are the most frequent: (1) Numbness of the toes or of the soles of the feet; (2) a feeling of abnormal coldness in the toes or in the entire foot; (3) a tired feeling in the feet which seems to come on after walking. This tired sensation may also be felt in the calf of the affected leg, and (4) pain of varying intensity in different parts of the feet, usually in the so-called arch or instep, which is made worse by walking a comparatively short distance.

Any of these symptoms are a warning that all is not well with the circulation of the legs and feet. An examination by a physician will instantly reveal whether or not such trouble is actually present. If this condition is found, the physician will prescribe the necessary treatment to improve the circulation in the feet and legs and will instruct the patient in the precautions that must be observed.

Warmth of the feet must be preserved by wearing undyed woolen hose as soon as cold weather begins. Women should wear woolen underhose throughout the winter months. For men, woolen socks of extra length are absolutely necessary, as well as the use of woolen underclothing. If there is a tendency for the



When symptoms indicate that all is not well with the circulation of the legs and feet, an examination by a physician will reveal whether or not diabetes is really present.

Stephen Deutch

feet to become cold at night, woolen bed socks should be worn.

It is now generally accepted by the medical profession that the use of tobacco has a definite effect on the circulation in the feet. It has been shown that during smoking the tiny blood vessels of the feet become squeezed and thus prevent blood from flowing freely. It can be readily seen that for any person with poor circulation in the extremities the added squeezing action of smoking on the blood vessels is not beneficial and may prove definitely harmful. For this reason, it is essential that the diabetic patient with symptoms of a disturbance of circulation in his feet should stop smoking completely and permanently.

A valuable aid in the stimulation of the circulation is a hot bath. This should be taken daily with the temperature of the water no higher than 105 F. and for no longer than 10 minutes, nor should the level of the water be higher than the hips. For cleansing, soap is much better than epsom salts, which are so universally used but which have no particular beneficial effect.

The diabetic patient must be interested in his feet for still another reason—because of their susceptibility to infection. Athlete's foot, technically known as tinea or ringworm infection, infects most people, sometimes without their knowledge. It usually expresses itself as an itching sensation between the toes,

particularly in warm weather. On close examination it will usually be found that there are cracks between the toes which may be painful. In addition, the skin between the toes may be soft and moist. Usually, these infections are not serious. They clear up either by themselves or with the use of simple remedies such as soap and water and talcum powder. In the diabetic patient, however, these cracks constitute a real menace because of the opportunities they afford for more dangerous germs to enter the tissues. If these dangerous germs get through the breaks in the skin between the toes, they rapidly penetrate deeper and cause inflammation which may be followed by gangrene. Thus, the prevention of these infections is of great importance to the diabetic patient. Daily foot soaks with ordinary soap in warm water are just as important as washing the hands. After the bath, the spaces between the toes must be carefully and gently dried and mild antiseptics such as mercurochrome or metaphen applied. At the first signs of unusual redness between the toes, or pain of any kind, a doctor should be consulted immediately since delay at this stage may result in the loss of a limb. Too often severe cases of gangrene have been started when the patient treated these infections between the toes by applying a strong solution of iodine. Generally, the tincture of iodine found in the average family medicine chest has been there so long that most of the alcohol has evaporated, leaving a dark, concentrated solution, which can severely burn the skin. Such solutions of iodine should not be used at all and for the diabetic it is safer to avoid the use of iodine on the feet. The application of strong ointments containing salicylic acids to these cracks between the toes may also result in serious consequences because the salicylic acid present in the ointment may destroy too much skin, leaving an open wound for the entrance of bacteria. Because the ringworm thrives best in dead skin, it is also frequently found in the center of a callus or so-called soft corn between the toes. The calluses are usually on the soles of the feet, in the metatarsal region, although they may also occur on the tips of the toes and on the top of the little toe. If they are infected with ringworm, they usually show a dark red or black spot in the center. These calluses may become infected with other germs and cause serious consequences. They should never be self treated. Razor blades and other home surgical instruments have caused the unnecessary loss of many a limb. These calluses and corns must be treated either by a physician or a well-trained chiropodist, both of whom will understand the proper precautions necessary. Attempts to remove these calluses and corns with commercial remedies such as corn plasters, corn removers, salves and other methods are extremely dangerous and should not be used. Improper cutting of toenails by patients is another source of serious infection. In the mistaken idea that the big toenail is growing into the flesh, many diabetic patients have tried to remove the sharp corner of the nail. This is usually a dangerous procedure because many diabetic patients have impaired eyesight, particularly the older people, and their attempts to remove the nail are clumsy and inaccurate; and often in tearing the offending nail, the skin is also torn, resulting in a small amount of bleeding which opens a pathway for germs to enter the foot. Trimming the toenails should be done only by the physician or the chiropodist who can instruct the patient or some member of the family in the proper technic.

Another frequent cause of serious trouble in the diabetic patient is the use of baking lamps of various kinds on the feet or legs to produce warmth. It is, of course, natural to assume that if the feet are cold—as they often are in the diabetic patient with poor circulation the proper thing to do is to warm them either with a baking lamp, an electrical heating pad or a hot water bottle. The skin of the feet and legs of these patients usually is so delicate and the circulation so poor that the use of any of these heating agents is accompanied with the greatest danger. This is especially true because the feet of these patients are usually not as normally sensitive as those of most people. Thus, the diabetic patient cannot tell when he is being burned, consequently the application of a hot water bottle or other heating apparatus may cause serious blisters and burns before the patient becomes aware of it. Wearing warm hose and the regular use of the hot bath will provide more warmth to the extremities in a safer manner than the use of any external heating apparatus.

It is essential that the diabetic patient should know of the possibility of two serious complications to which he is subject, both of which are to a great extent preventable. Poor circulation in the feet should be detected early and proper methods of treatment begun without delay. Infections *(Continued on page 764)*

Common Ear Troubles

Illnesses of the inner ear are often the after-effects of infectious diseases such as scarlet fever, typhoid fever and grip. The nerve of hearing seems especially sensitive to the poisons and toxins of these diseases

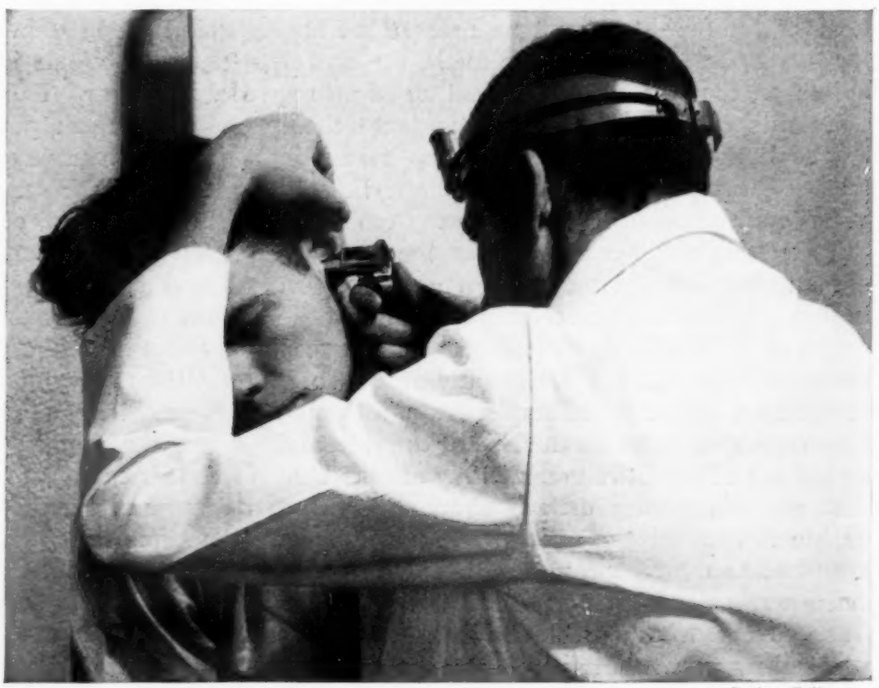
By WALDEMAR SCHWEISHEIMER

A HOUSEWIFE noticed that for some time her hearing had been growing poorer. She could hardly hear a voice on the telephone. When she was talking to another person, while her vacuum cleaner was running, she was hardly able to hear what the other person said—a fact that made her nervous. She also noticed that she could hear much less from her left ear than from her right.

The woman imagined that her ears might be stopped up by hardened plugs of earwax, the secretion of special glands in the auditory canal. She remembered that a friend of hers had fully regained her hearing by having her ears syringed.

There is no more wonderful cure than that brought about by removal of a plug of hardened earwax. Simple as it is, total deafening can be transformed immediately to full hearing. But in the case of the housewife, examination showed the outer part of the ear canal to be free, and the drum membrane plainly visible. It was a case of inflammation of the middle ear and the eustachian tube, which connects the middle ear with the rear part of the throat. To syringe the auditory canal would have been useless; but the doctor applied another remedy. By pressing air through the nose into the middle ear and applying warmth, the inflammation was soon overcome and the deafening disappeared completely.

The middle ear and the eustachian tube are lined with mucous membranes; consequently



Ewing Galloway

In advanced cases of deafness, hearing often can be improved by the use of a mechanical aid. Some modern forms of apparatus make use of sound transmission through the bones of the skull.

they are subject to the same kinds of disease as the membranes of the nose (colds) and of the throat (sore throat). They may easily become infected by germs entering from the throat or nose. The symptoms of infection are earache, defective hearing, or buzzing and humming in the ears. Sometimes an inflammation of the middle ear will exude pus, which may delay the healing process and may call for protracted treatment.

It is easier for many persons to get accustomed to poor hearing than to the continuous presence of humming, buzzing and ringing sounds in the ears. Such noises, whether temporary or permanent, are most disturbing. Beethoven complained bitterly of such disturbances, more than of his deafening. In the majority of such cases, however, temporary noises can be banished by proper treatment.

In an ear disease called otosclerosis the noises may be much more distressing to the patient than the retrogression of hearing. This disease is manifested by a gradual growing together of the three small bones behind the drum membrane, commonly called the hammer, anvil, and stirrup. The tendency to otosclerosis can be inherited and may, therefore, appear in several members of the same family. As a rule, older persons are affected.

Illnesses of the inner ear are often the aftereffects of infectious diseases such as scarlet fever, typhoid fever and grip. It seems evident that the nerve of hearing, called the auditory or acoustic nerve, is especially sensitive to the poisons and toxins of these infectious diseases. Faulty metabolism, diabetes, gout, arteriosclerosis and several blood diseases may react on this nerve. Alcohol, nicotine and other narcotics, and even excessive use of medicines can, in time, also injure this nerve. Industrial workers who work with lead are sometimes affected by lead intoxication, which may damage the nerve. In all these cases it is of utmost importance to recognize the true cause of the disturbance.

Hearing is endangered by single or repeated strong sounds: a shrill whistle close to the ear, loud explosions, or a severe blow on the ear. Sensitive persons cannot stand the sound of a trumpet, and it was perhaps for this reason that young Mozart objected to trumpet blowing. Explosions may cause reddening, bleeding or even a rupture of the drum membrane.

Hearing is sometimes defective for sounds of different pitches. One may be able to understand a female voice perfectly, whereas a male voice may be unintelligible, or vice versa. More often, the ability to hear high notes is lost first. "Treble-deafness," of which Beethoven's deafness is a characteristic example, is often an early symptom of disease of the inner ear.

Today, an ear specialist can tell exactly the nature of the disturbance. The hearing is tested by transmission of the sound waves of the air and by the ability of the skull bones to transmit sound. Many persons do not know that the skull bones transmit sounds to the inner ear—a newly detected kind of hearing. Different ear diseases have different effects on this kind of sound transmission.

Medical science and art are able to cope with various kinds of deafening, but not with all. In many cases, the proper treatment can quickly improve or cure the ailment. Removal of the obstruction in the outer acoustic duct—such as a hardened earwax plug, and the blowing of air through the nose into the affected middle ear—often give prompt relief.

Heat in various forms is a valuable therapeutic measure, especially for simple catarrh and inflammation. In otosclerosis, electric massage of the drum may help to keep the small acoustic bones from growing together. An ailment of the inner ear, or of the nerve, is improved or cured by the successful treatment of the basic trouble. Nervous disturbances and noises in the ear disappear frequently when the entire nervous system is improved and strengthened by proper treatment.

In advanced cases of deafening, hearing can often be improved by the use of a mechanical aid. Persons who are hard of hearing have a choice between an old-fashioned eartrumpet, an ear tube, or an electric apparatus. Some modern forms of apparatus make use of sound transmission through the skull bones. It has been proved that words as well as musical effects can be transmitted by these instruments. Beethoven used certain kinds of ear trumpets, but without success. If he could have used a modern electric instrument, he would have been able to hear at least for many more years, perhaps for life. It can hardly be imagined how important such an aid would have been to him and to his creative work; his life's tragedy would have been softened immeasurably. But fortunately, today, deafness is not such a hopeless affliction as it was during the time of Beethoven.

By Lois Mattox Miller

SURGEON'S

SWIFT AND SPECTACULAR as has been the recent progress in medical discovery, surgery has quietly kept step. Every day, in thousands of hospitals throughout the United States, surgeons are performing operations that would have been impossible a few years—or months—ago.

Here are a few of the milestones the surgeon has recently passed in his unending quest for surer, safer and swifter ways to mend broken and diseased bodies, banish pain and prolong life.

The "Darning Egg" for Veins

For years one of the most difficult tasks confronting the surgeon has been to stitch together neatly the limp, delicate ends of a severed blood vessel. Last year this vital problem engaged the attention of young Sidney Smith, then a third-year medical student at the University of Chicago. What the surgeon needed, Mr. Smith decided, was something similar in principle to the china egg which his grandmother had used in darning socks. With such an implement to hold the vein smooth and in natural tubular form, a neat job of stitching could be done. But, obviously, there was one serious flaw in this otherwise good idea: what was to become of the "egg" after it was irretrievably sewed up inside the blood vessel?

Young Mr. Smith emerged from the laboratory with the problem solved. Into a series of sterilized rubber tubes of various sizes he had poured a carmelized liquid made by melting pure dextrose sugar. When these sugar-sticks had hardened, he cut them into desired lengths, removed the rubber tubing, and coated them with a gelatine that becomes soluble at body temperature. The surgeon operating on a blood vessel now merely clamps off the blood supply, slips the two ends over one of these sugar rods of the proper diameter, stitches the vessel together neatly, and then removes the clamps. Says the young inventor: "The rod dissolves (in one minute or less) in the blood stream after circulation is reinstituted."

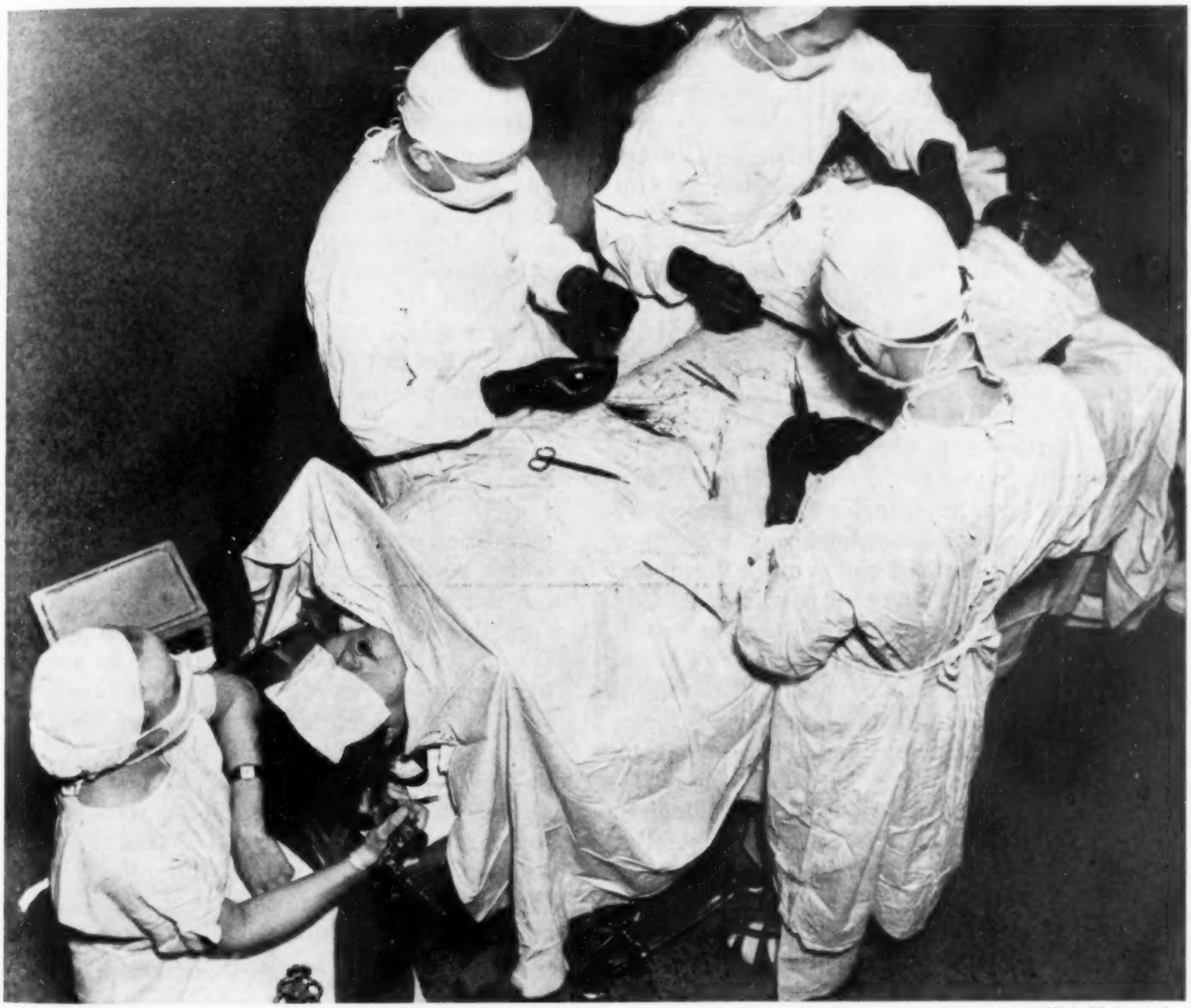
This past June, Sidney Smith received his M.D. degree and began his internship with honors rare among young doctors: he had received a high professional award, and seen his paper describing the "surgical darning egg" published in the distinguished *Archives of Surgery*.

Vitallium—The Friendly Alloy

Injuries, and certain infections, often destroy the hard, ivory-smooth cartilage that covers the head of the long thigh bone and lines the socket of the hip joint, and thus allows these two surfaces to glide freely against each other. The result is a painful and crippling condition, in which the bones unite solidly and deprive the hip joint of all motion. This is a fairly frequent deformity. Surgeons have long considered it futile to separate the bones by operation. Inevitably, they would re-unite long before Nature could complete the slow process of forming new cartilage.

For many years this surgical problem occupied the attention of Dr. M. N. Smith-Petersen, Chief Orthopedic Surgeon of the Massachusetts General Hospital. He reasoned that if, after removing the bony growth, he could slip some sort of cup over the head of the thighbone, regrowth of bone could be prevented, the hip joint could function, and in time new cartilage would be formed. Then, a year or more later, a second operation could be performed to remove the cup.

PROGRESS



PWA Photograph

Within the last year it has been possible for surgeons armed with solutions of heparin to operate successfully on certain forms of blood clotting which, in the past, had caused death in from 85 to 95 per cent of all cases

Dr. Smith-Petersen first tried a glass cup, but invariably it broke under the patient's weight. Celluloids and plastics also proved unsatisfactory. Various metals he tried seriously irritated the body tissues. Then, three years ago, a dentist who was filling his teeth told Dr. Smith-Petersen about a remarkable new metal alloy called vitallium which had been developed by Dr. Charles S. Venable of San Antonio, Texas.

Vitallium is 65 per cent cobalt, 30 per cent chromium, and 5 per cent molybdenum. Unlike other metals, it can be buried deep in the tissues of the human body without causing any irritation.

Dr. Smith-Petersen made and inserted his first vitallium hip-cup in 1938, and the operation has been repeated hundreds of times since by surgeons in other hospitals. Within a few days the patient can move his leg without discomfort; in the second week he is encouraged to exercise the joint in bed; and after the fifth week he exercises regularly on a stationary bicycle. Within two months he is walking easily on a cane or crutches; soon even these aids are discarded.

Dr. Smith-Petersen has had to make a cheerful revision in his surgical plan. Once the cup is placed in the hip socket, it is good for a lifetime. No second operation is needed to remove vitallium—the only metal alloy that is completely "friendly" to human flesh. At the Mayo Clinic, vitallium is now the only metal used in bone surgery.

Nature's "Nerve Glue"

Unlike other cells of the body, nerve cells do not multiply and replace themselves. When nerves are torn by injuries or separated by surgery the stumps must be brought together so that the tiny tendrils can reunite the fibers. Even for an expert surgeon, this is a delicate and difficult job, for at best the nerves are ill suited to needlework. Says Dr. J. F. Fulton, of the Yale School of Medicine: "Running a small catgut suture through a mixed nerve trunk is a little like pulling a two-inch rope through a silk brocade."

Last September, two Oxford Zoölogists, working under a grant from the Rockefeller Foundation, produced a method which may do away with nerve stitching entirely. They packed arterial blood from a chicken in ice for 10 minutes, and then spun it in a large centrifuge to produce a sticky "mucilage." Nerve stumps are held together, and this plasma poured over them. In less than 10 minutes a firm jelly is formed which holds the ends together securely. This "nerve glue" lasts just long enough to allow the tissues to form a perfect union, then dissolves and is absorbed by the body.

This method, Dr. Fulton told the College of Physicians at Philadelphia last December, "gives a much smoother and more physiologic union without the serious distortions among the nerve fasciculae which inevitably results from the use of silk sutures."

Heparin—The Blood Solvent

Not the least of the manifold mysteries of the blood is its tendency to coagulate or clot when exposed to air. Without this self-sealing element—the tiny, sticky platelets in the blood stream—people might bleed to death from even minor cuts and scratches, and all surgery would be impossible.

However, blood-clotting sometimes causes trouble. Platelets adhere to slight flaws on the inner walls of blood vessels, pile up and form clots of fibrin that block circulation. Surgeons operating to remove such clots often realize that their best efforts only complicated a serious condition. The seam or suture in the repaired vein or artery formed a crevice ideal for further platelet accumulations.

In 1916 several Johns Hopkins invesigators extracted from dog liver a substance called heparin which tended to slow up blood coagulation. But in this crude form heparin was too toxic for use on human beings and had to be abandoned. C. H. Best (co-discoverer of insulin), A. F. Charles, D. H. Scott and Gordon Murray revived the experiments at the University of Toronto and found even larger quantities of heparin in ox lungs, in a form which could be reduced to a pure, non-toxic barium salt.

Within the past year it has become possible for surgeons armed with solutions of heparin to operate successfully on clotted blood vessels, even in certain forms of embolism and thrombosis (blood clotting) which, in the past, had caused death in from 85 to 95 per cent of all cases. Now, after the clot is removed and the vein or artery sutured, heparin is allowed to drip continuously into the blood stream through a hollow needle inserted near the site of the operation. Healing takes place in due course with no further danger of clot formation.

Heparin is also being used experimentally to treat the formerly incurable bacterial infection of the inner lining of the heart called endocarditis. In this disease, clots of platelets and fibrin clutter up the tissues surrounding the heart valves and prevent the white blood cells from reaching and destroying the bacteria. Now doctors hope to attack the condition with a combination of "wonder drugs": heparin to clear the way, followed by sulfanilamide to help terminate the infection.

Prehabilitation of Registrants: II

RID YOURSELF OF MINOR DEFECTS

Many minor defects may be corrected readily and often with material improvement to general health and welfare. Even mild measures may rid you of some minor ailments and make you fit for military service and such procedure may even prolong your life. Do not permit trivial physical defects to develop into serious diseases. Do not let minor defects interfere with major objectives. The following table indicates the numerical and relative importance of minor defects according to data on rejections by local boards:

DEFECT	Relative Importance of Causes for Limited Service Classification Class I-B Per cent of Total	Relative Importance of Causes of Disqualification Class IV-B Per cent of Total
Teeth	28.86	14.01
Eyes	18.00	7.28
Cardiovascular	4.14	12.67
Musculo-Skeletal	7.79	8.61
Hernia	7.95	2.56
Nervous and Mental	1.04	8.54
Ears, Nose and Throat	2.92	5.12
Feet	4.59	2.41
Syphilis	3.20	2.86
Over and Under Weight	4.49	2.56
Lungs	2.08	4.65
Endocrine	.62	2.12
Genitalia	1.99	1.90
Varicose Veins	.90	1.21
Abdominal Viscera	.68	1.16
Mouth and Gums	.42	.84
Gonorrhea	.68	.45
Skin	.33	.59
Over and Under Height	.03	.52
Hemorrhoids	.65	.34
Obviously Disqualified	...	10.32
Generally Delinquent	8.55	8.98
Other Defects	.09	.32

In connection with these minor defects there are two things for you to do:

Consult your family doctor or dentist, if you find that you suffer from any of these minor ailments mentioned below.

Follow the advice of your doctor or dentist; let him put you back into good condition, if arrangements can be made on a basis that is mutually satisfactory. If not, let him direct you to the nearest clinic, hospital or social service agency best suited to your particular needs.

Multiple minor ailments and defects may render you generally unfit. None of these conditions in themselves may be disqualifying, yet because of their number you may be rejected. For all such minor ailments, see your doctor. He may be able to rid you of them without danger to you and with a good prospect of improving your general health.

DENTAL DEFECTS

If you have toothache, tender or bleeding gums or gum boils—see your dentist. It is wise to remember that the simple filling of a tooth, the addition of a dummy or small bridge may be of great importance, and that the clearing up of a minor infection about a tooth or in the gums may sometimes prevent serious disease.

By the proper care of your teeth, rid yourself of any such potential source of trouble; qualify yourself for your local and induction board examinations and render yourself fit for service.

DEFECTIVE VISION

For eye trouble of any kind, for poor vision, for undue watering, pain, burning and tiring of the eyes, for headaches following movies or much reading—see your doctor. A pair of properly fitted glasses may make the difference between your becoming a nervous wreck or a competent soldier, a weak, broken-down neurasthenic or wholesome, healthy, robust man. Take them with you when you go for your examinations.

FEET

In these days of gymnasiums and swimming pools, an infection of the feet, commonly called "athlete's foot" is frequently encountered. A similar type of infection with fungi is often found in the groins. Without treatment these diseases are apt to spread and become chronic and disabling. Under the care of a doctor, they can frequently be cured with quickness and dispatch. Get rid of the infection immediately while it is still in its active stage. If not—it will tend to become chronic and disabling, and in addition, because it is contagious, many other people may become infected.

THYROID DISEASE

If you have a lump or swelling low down in the front of the neck, consult your doctor and let him determine whether or not it represents goiter. Simple goiters are usually devoid of symptoms and can often be quickly cured under medical management. In this same connection, it is well known that the function of the thyroid gland often becomes depressed, leading to undue pallor of the skin, puffiness, excessive fatigue, logginess and to mental and physical langor and apathy. These symptoms may all disappear and the condition cured within a short period of time by the judicious, continuous use of proper amounts *(Continued on page 767)*

"THE JOB'S YOURS" were the words that were repeating themselves in Don Canfield's mind as he waited for Mr. Bryant, the employment manager, to return. "The job's yours" were the words Mr. Bryant had said just before he was unexpectedly called away.

Getting this job had not been easy for Don Canfield. Now, while he waited for Mr. Bryant's return, he looked back over the steps he had taken to reach this goal. After his graduation from high school, he had applied for this same position, but Mr. Bryant had told him then that he needed more experience. So he had worked in many different jobs and studied at night to prepare himself for this work.

Don had worked in factories, offices, stores and on a large dairy farm one summer. Each job had given him more experience and training for the next one.

He had learned that employers liked his healthy, well-groomed look and the personal interest he took in any job assigned to him. They all had commented on his alert attitude, his clean-cut appearance and his physical stamina. Had not Mr. Bryant just told him that it was his good health and youthful enthusiasm that had led finally to his being selected from the other young men whose training and experience qualified them equally well for the job?

Don also recalled the different application blanks which he had filled out during the past few years. Because questions concerning illness and general condition of health had appeared in all of these forms, it now became clear to him how important health and physical fitness were in all jobs. Just a few minutes ago he had seen in Mr. Bryant's hand the detailed report of his own physical examination made by Dr. Todd, the physician for the company.

Mr. Bryant returned. Sitting down, he continued, "I suppose you realize that this report was the last bit of information I needed. Do you know why we asked you to have this physical examination, even though you appear to be so perfectly healthy?"

"Yes, sir—I think I do. But I'd have wondered four years ago. You see, I learned a lot about the importance of good health in getting jobs, because I applied for so many."

"I am sure, now," said Mr. Bryant, "that you weren't refused a job because of your health."

"That's true, sir; and some of the jobs were pretty strenuous."

"Yes, I noticed that on your record. You know what hard work is—and long hours too.

"By the way, Don, I'm sure you would like to know that we have checked your references. Each one emphasizes your dependability and reports that you were seldom absent."

THE JOB'S YOURS

Many men and women with both excellent training and enviable experience are refused positions because of their dull eyes, lack of vigor and indifferent manner

By DOROTHY J. KELLEY

"The milk service gives our employees the 'pick-up' they need between meals."

"Thanks for telling me. I'll try to keep my record here the same."

Don was to become an assistant in the employment department after a few months of training in each of the production departments. Mr. Bryant described the many qualities, other than experience and training, which an employer considers when interviewing an applicant. He pointed out that young people, in their eagerness to acquire good vocational training, often neglect the more personal qualities which they should be developing at the same time.

Some of the qualities Mr. Bryant stressed were health, enthusiasm, pleasing personality, well-groomed appearance, poise, tact and a pleasant voice.

"I notice that you put health first," said Don. "I have two friends who should hear you say that. One of them just told me he lost his job

—a good one, too—because he was absent so much. The other is a girl who likes her secretarial job but she's afraid she'll have to give it up. She doesn't seem to have enough pep to do the work required of her."

"Yes, Don, more young people should realize that health is a priceless possession which can't be put on like a new necktie or a different dress when one applies for a job.

"As another illustration," Mr. Bryant continued, "I'll tell you, in confidence, about the young woman I interviewed when I was called from the office a few minutes ago. She came to us with excellent qualifications for the position of traveling supervisor.

"We are eager to employ her. But Dr. Todd tells me that it would be an injustice to her to offer her the position. Since the work requires almost continuous traveling with irregular hours, it would be too hard for her in her present state of health.

"Dr. Todd finds that she is considerably underweight and that she tires easily. He has made some suggestions for her health and I have asked her to return at the end of six months for another examination."

"I hadn't thought before that sometimes a report of a physical examination is a protection to the applicant as well as to the company."

"That's right, Don. We asked you to have a physical examination for two reasons. First, I needed to be protected against having an assistant who would not be dependable because of too many absences from work. Second, you needed to be protected against having a job which might prove too strenuous for you."

"Can't you tell, without a physical examination, that an applicant's health isn't good?" Don asked.

"Not always, but often our eyes tell us at once which applicants are not physically fit."

Interviewers in employment offices soon learn to recognize many of the outward evidences of a person's physical condition. Many young men and women with excellent training and good experience are refused positions because of their dull eyes, indifferent manner and lack of vigor. They obviously do not take the right care of themselves.

"Isn't the physical examination the last step in hiring a person, though?" asked Don.

"Yes, but that doesn't mean that health is the least important qualification. To most employers, it is as important as training and experience. Sometimes it is more important.

"In fact, I believe that an applicant's desirable personal qualifications, such as his appearance, enthusiasm and alertness depend to a large extent on that one basic quality—his good general health."

Mr. Bryant asked Don to follow him into his assistant's office, next door.

"Miss Fiske, Don Canfield is to become an assistant at one of our interviewing desks. We have been discussing the importance of health in getting and holding a job.

"Will you please take him through our buildings to show him just what we do to maintain the good health of our employees?

"I want him to realize that illness is expensive to both the employee and the employer—the employee loses his wages when he is absent, the employer loses the skilled services of the employee and thereby money."

Miss Fiske and Don left Mr. Bryant and walked down a long corridor into a large, pleasantly furnished room. Don recognized it as the reception room of the medical service bureau. Here, Dr. Todd answered Don's questions about the medical department.

"Some employees call this the hospital since we maintain a staff of two doctors and four nurses. We prefer to call it our medical service bureau."

Don interrupted, "Your employees don't have enough accidents to keep you busy, do they?"

"No, indeed." Dr. Todd answered, as most company physicians might have answered the same question.

"As a result of medical service bureaus established by many companies, there are fewer accidents and a great decrease in absences due to illness. Our employees are encouraged to come to the medical service bureau for advice for themselves and their families. There is no charge.

"Employers find that it pays them to help their employees keep themselves in the best of health. No one can do his best work when he doesn't feel well; nor can he hold a job for long if he's absent because of illness. We also find that employees who are not worried about themselves or their families don't have so many accidents. Our medical service bureau has shown them the value of protecting themselves daily with proper food, sufficient rest and exercise.

"Most important of all," continued Dr. Todd, "our workers are interested in the fact that a person in good health *(Continued on page 765)*

Sex Education

FOR THE WOMAN AT MENOPAUSE

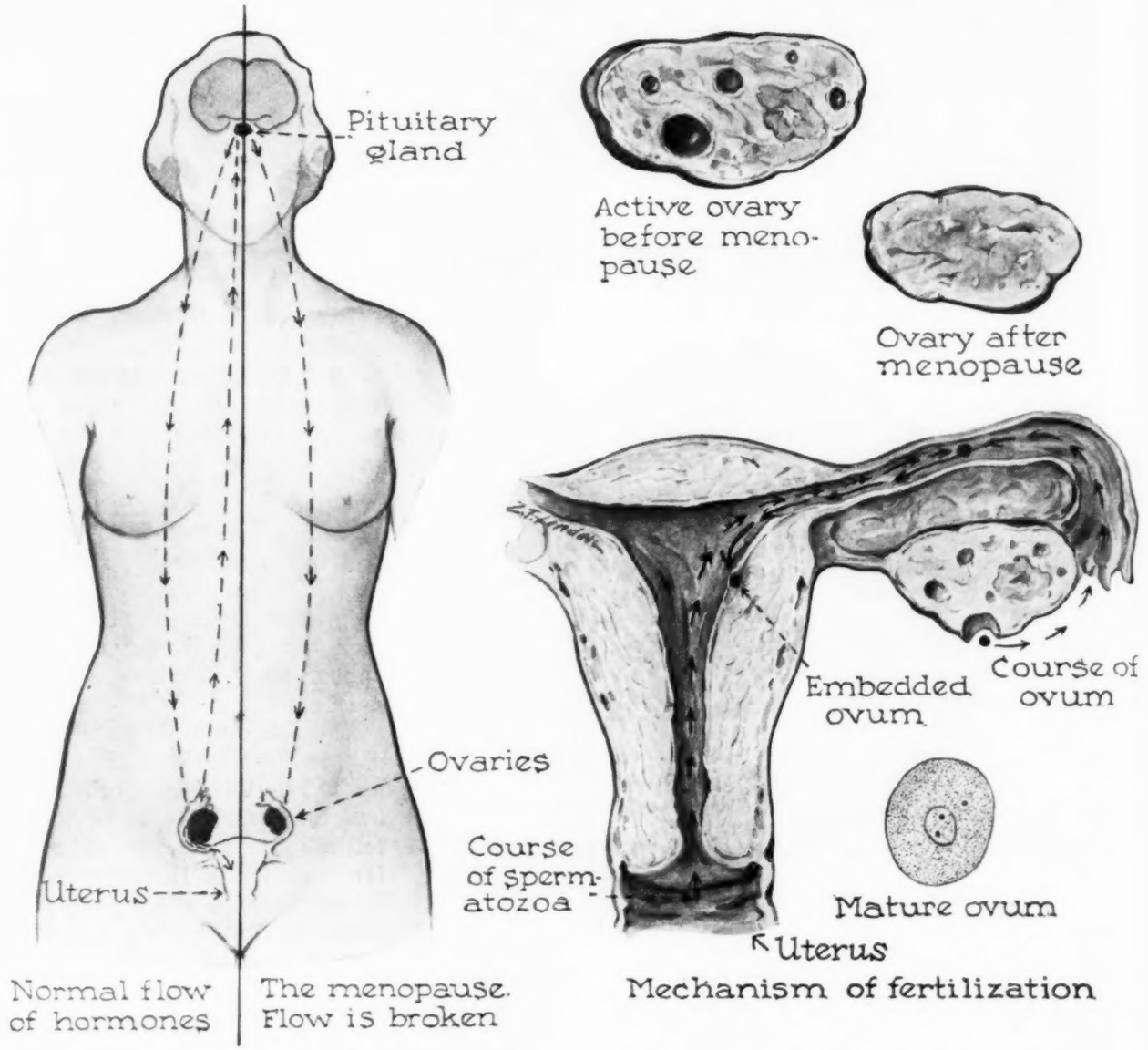
By CARL G. HARTMAN

THE TRADITIONAL PICTURE of the menopause or the "change of life" is that of a stormy entry into the winter of life, of a troublous end to the long grind incident to bearing and rearing a family, of the end of joys pertaining to the prime of life. Childless women, too, often look forward with dread to this period, which, in the popular mind, looms forebodingly.

This pessimistic conception, like other traditional points of view, is based on sufficient truth to guarantee its perpetuation in the folklore; for it is easy to cite from one's acquaintanceship women who at the "change" experience great physical and mental discomfort and require medical attention on the part of the gynecologist and sometimes of the psychiatrist as well. True perspective is lost also because many symptoms incident to the menopausal age are wrongfully attributed in the popular mind to the cessation of the reproductive functions. What is generally overlooked is that at the corresponding age men likewise are "not what they used to be," though their climacteric, such as they have, does not appear until a decade or two later.

A more optimistic attitude is dictated by the facts. The menopause is a biologic necessity and hence, by and large, an advantage to the race. First, it is clear that the cessation of the reproductive function, or in other words the acquired sterility, is a protective measure which Nature offers womankind against childbearing beyond her most vigorous years. Eighty-five out of every 100 women pass through the change of life with only mild symptoms or no pathology at all; and for many of the less fortunate 15 per cent, medical science has found new palliative remedies known to relieve some of the worst symptoms with reasonable certainty and thus to ease the patient comfortably into the post-menopausal surcease from female complaints.

It is now becoming clear that by virtue of normal physiologic processes woman is protected both against too early and against too late childbearing. The adolescent girl is sterile for several years after she begins to menstruate because for that period she produces no mature eggs. At the end of her thirty years of maturity and fertility, the woman ceases to produce mature eggs even though for several years more she continues to menstruate more



A Diagram of the Glandular Relationships in Menstruation and Fertilization

or less regularly. Thus girls begin to menstruate at about 13 or 14 but usually are not mature, i. e., fertile, until 17 or 18. A woman's fertility usually declines rapidly from 35 to 40, while menopause and the consequent sterility sets in between 45 and 50.

In the world of animal life it is characteristic of lower forms that the individual becomes superfluous when its reproductive functions are finished. Among the highest forms, the mammals, however, both male and female outlive their capacity to produce offspring. This is true even in the wild state, for frequently free living individuals are captured which are palpably too old to reproduce though still sufficiently vigorous to maintain themselves with speed of flight or sharpness of tooth and claw. It is an economy of nature that production of offspring ceases before maternal care becomes uncertain through decrepitude of the mother. Among domestic animals too (cats, dogs, horses, birds) superannuated and long sterile individuals are familiar to almost every one. Since animals cannot talk, however, the onset

of infertility in them, so far as known, seems to be quite symptomless and the menopause plays no part in veterinary medicine.

The lengthening "period of infancy" seen in the higher brackets of animal life culminates in man and has made the early menopause even more imperative biologically. This longer period of dependency of the human offspring is correlated with the complexity and slower development of man's nervous system, notably the brain. In civilized society the period of dependency now comprises from one fourth to one third of the total life span. It would seem, therefore, not a matter of accident but rather a design of nature (called "adaptation" by biologists) that women cease reproducing almost in the prime of life. Whatever may be the ultimate cause for this adaptation, it is a comforting fact that the early onset of sterility does, on the average, leave the mother sufficient energy to rear and educate all of the children. In this point of view the menopause is to be looked on as a natural, physiologic phenomenon wisely worked out by the hand of Nature.

While the ultimate causes of man's progress to the present state may be left to anybody's speculation, recent researches in the field of internal secretions as related to reproductive physiology have taught us something of the immediate causes of the natural menopause. Let us consider first some of the physiologic factors underlying the menstrual cycle, for it is on these that medical science has based a rational treatment for the alleviation of pathologic symptoms of the menopausal period.

It has long been known, even to the unintelligent person, that somehow the ovaries control the menstrual cycle. It should soon also become common knowledge (since this discovery is now fifteen years old) that the ovaries are controlled in their activity by that master gland, the pituitary body, situated at the base of the brain. From this gland chemical messengers or hormones are sent through the blood stream to the ovaries (and other glands), whipping them into activity. In their turn the ovaries send regulatory hormones back to the pituitary to curb its activity. This rhythmic ebb and flow of stimulating and inhibiting hormones produces the menstrual cycle.

The menopause (which in the strict sense means cessation of menstruation, and in the broad, less exact sense, the change of life) results when the hormones of the ovary vanish from the picture.

In the ovary there are tens of thousands of eggs, each so minute that a million could crowd into the head of a pin, were this hollow. Periodically, platoons of these are drafted into the ranks of growing eggs, perhaps 25,000 in a single cycle. Each egg, after a period of growth, invests itself with an envelope of satellite cells which multiply until they form a sac or "follicle" which fills with fluid in which the egg comes finally to float. Usually all but one of the sacs with their eggs, die and are absorbed. Through the operation of a kind of natural selection one egg (in the human species) survives and matures and the sac containing it grows, under the stimulus of the pituitary hormones, to about the size of a marble. Further hormone stimulation causes it to burst and to discharge the egg (ovulation) into the Fallopian tube where, if a male sperm cell happens to be present, it may be fertilized and a new human being start to develop.

The egg sac not only harbors the egg, but it also secretes hormones which are important in the internal economy of the body. These hormones (estrogens and progesterone) stimulate the uterus, preparing it for a fit nesting site for the fertilized egg. If this is absent, the cradle is torn down and is discarded, passing off with the blood in the menstrual flow.

The egg thus becomes the center of the reproductive activity and of the menstrual cycle, since where there is no egg there can be no conception or reproduction, no egg sac, no sex hormones and hence no menstruation. So long as there is a supply of eggs and so long as these respond to the call of the hormones of the pituitary, so long is reproduction, or at least menstruation, possible. Eventually, however, namely at the menopause, the ovaries refuse to function. They are then almost devoid of eggs and what few are present remain dormant. The exhaustion of the ovary is the primary cause of the menopause, for the pituitary remains active for decades longer, as shown by the large amount of hormones from this gland which are excreted in the urine of post-menopausal woman, also in younger women who have entered "artificial" menopause through surgical removal of their ovaries.

The dying down of ovarian functions eliminates the sex hormones from the blood stream and these are replaced by unused or excess hormones from the pituitary. The endocrine imbalance *(Continued on page 747)*

Lifting the Lid

In New Haven, Conn., two scientists stood at a sewer, discussing a community health problem.

IN NEW HAVEN, Conn., within walking distance of the Medical School of Yale University, one morning two scientists stood at a sewer, discussing one of their problems. To the corner policeman this appeared to be an odd meeting. However, the learned men assured the officer what they had in mind was not a college prank but a community problem to solve. Their task was to open the lid of the sewer, sample its sewage, and by means of culture medium grow the tiny "germ" responsible for the infantile paralysis for which a drain located near the hospital was then suspected. Almost at the same time, Dr. Charles Armstrong, of the United States Public Health Service, and his personnel, were engaged in setting traps for the cotton rat to learn more about the carrying powers and susceptibility of the rodent to the virus of infantile paralysis. In laboratories everywhere, men and women are equipped with microscopic devices to track down the presence and habitat of these destroyers of human flesh and bone. Whether the information gathered is culled from sewers or through animal experimentation, these health agents pool their common resources with a singleness of thought to offset the blitzkrieg malady known in the medical profession as acute anterior poliomyelitis.

In the vast category of diseases to which the human being falls heir, body paralysis is the most distressing, particularly the type which follows acute anterior poliomyelitis. Every one dreads the disease because of the suddenness with which it attacks, depriving the patient of his power of locomotion. But the medical man has mobilized all scientific resources for the prevention and cure of "polio." To be armed with information about these epi-

# of Infantile Paralysis

By LEON FELDERMAN

demic cycles of poliomyelitis may lead to possession of an effective weapon to curb the yearly recurrent outbreaks.

The term infantile paralysis is misleading, for adults, too, fall victims to this disease. Apparently the Greeks had a word for this melpomene which strikes so swiftly and without mercy. "Polio" refers to the gray matter, "myelo" to the marrow, and "itis" to inflammation. The disease attacks the gray matter of the brain, as well as the marrow substance of the spinal cord, thus injuring the sensitive centers which control arm, trunk and leg movements. A few summers ago, when an epidemic of poliomyelitis was raging in Philadelphia, an anxious parent inquired why the physicians apparently lagged behind in their effort to combat the despoiler of human happiness. However, not so obvious are the overwhelming odds which face investigators when seeking the identity of this troublesome, elusive "germ."

The disorder is caused by an ultra filtrable agency so microscopic in size that it escapes detection by the most powerful instruments science commands. The first indication that the infection has successfully invaded the host is often the striking helplessness of the patient. The group of muscles affected cannot execute the will of the mind. Under normal conditions a muscular action is completed by sending a message to the brain; the return message is then received by the group muscles which effects the motion.

What manner of malady is it which strikes its victim with such devastating force, leaving him bedridden? The virus, by invading the brain and spinal tracts, does more damage in a few hours than the combined skill of the physicians and surgeons can restore in a life-time. It is a disease in which the after-effects are feared more than the actual rigors of the disease. No one can predict accurately the extent of functional impairment which will affect limb movements. The movements which were accomplished with ease and grace only a day before are no longer possible.

Patients complain of a tingling or creeping sensation extending over the skin surface, which becomes painful to the touch. For this reason children fret, prefer not to be handled and wish to be left alone. Frontal headaches, vomiting and muscular stiffness of the back are not uncommon features of this ailment, with or without drowsiness. Less frequently children reveal a high point of nervous irritability, and when disturbed, cry out in annoyance. Constipation or diarrhea is interchangeable and has no special significance.

Physical disorders such as upset stomachs and acute colds should receive medical attention.

All fruits and vegetables should be washed free from any contamination before they are served.

The drinking of unpasteurized milk and the use of a community drinking cup should be stopped.

Locomotion is partially or completely lost within the short space of a few hours.

Statistical studies prove that an epidemic may attack any part of the state or continent. It descends on the home of the poor and rich alike; we read one day of the presence of an epidemic in a certain state, only to find that it encompassed another geographical location the next day. In Los Angeles and its adjacent territory, the maximum epidemic curve began in May and reached its peak in June. In the records for the year 1912 a number of successive small epidemics appeared in the metropolitan area of New York. In the same area, during the epidemic of 1916, 4,215 cases were encountered with a fatality of 901 deaths, or 21.4 per cent; 57 per cent of these cases were reported before the peak of the epidemic was reached in the first week of August, with the maximum curve during the first week in September. Sixteen counties along the Hudson River Valley, Long Island, including Nassau and Westchester counties, received the full force of the blow.

It also appears that each year epidemics of this malady are becoming more widespread, leaving crippled bodies as an aftermath. Acute poliomyelitis is rarely seen in spring, as in California in 1912, but attains epidemic growth during the summer months and in the early fall, as in New York City in 1931.

The ages of the patients vary from 6 months to 12 years, with an average age of 4 years. The males with a percentage of 55 have a slight lead. The Negro, judging from available statistics, is slightly less susceptible than the white man. In the 1931 New York City epidemic, the attack rate among the Negroes was only two-fifths of that of the white population. Out of 2,402 cases admitted to the contagious disease hospitals, only 74 were Negroes.

In a group of 686 cases which occurred in the New York City epidemic of 1935 it was found that 10 cases followed the removal of tonsils and adenoids. The inference was that etherization followed by tonsil surgery created sufficient injury to the throat tissues to lessen resistance of the patient in the presence of an epidemic.

One of the many difficulties that scientific men encounter is maintaining the strength of the virus of infantile paralysis. Workers have attempted to transfer the virus from human beings to monkeys, and for some reason they could not bring about effective "takes." Out of hundreds of tests which bacteriologists have made to locate the virus in the human body, many conflicting reports have resulted. Some investigators hold the view that the virus is located in the upper air passages, whereas others have been successful in finding the "germ" in the intestinal discharges of patients ill with infantile paralysis. Drs. Paul and Trask of Yale University, by powerful devices, have been able to demonstrate the presence of the virus in intestinal discharges much more often than it could be traced to the upper air passages. The question then arises, how does the

Both diving and swimming encourage infection by washing off a protective mucus within the nose.

A doctor should be called immediately when the first symptoms of infantile paralysis appear.

virus get into the intestinal tract? It has been suggested that the "germ" gets first into the nose and throat and works its way down to the lower tract. In the Charleston epidemic in the summer of 1939, Drs. Trask and Paul found the virus in the sewage of that city. They were also able to prove that it was easier to isolate the virus in patients who had mild attacks, than in those in whom the attacks resulted in complete paralysis. It is also known that the presence of the virus of the infantile paralysis has been found in virtually normal people, and whether or not these people have a certain amount of natural immunity, only further studies of the subject will settle. Contaminated foods may be a source of the infection of infantile paralysis. Food may be contaminated by hands which have come in contact with intestinal discharges. For this reason, precautions must be taken to see that food handlers are not carriers of the disease.

Diving and swimming encourage the infective processes by washing off the protective layer of mucus within the nose. The health index of a person depends on his activity and on the protective immunity he can offer at the time of attack. The medical profession speaks of this group of patients as being endowed with subclinical immunity. This works out factually in "polio" epidemics. With every epidemic a number of patients become ill for a few hours, complain that they are "feeling out of sorts" and recover without leaving any signs of the attack.

A parallel between the season variation and the seasonal curve of poliomyelitis is present and the human body is not always able to cope with the strains and stresses concomitant to seasonal variations.

The medical profession is at present engaged in a crusade of prevention. Every bit of scientific evidence gathered through experimentation or other means furthers their effectiveness in combatting one of the most uncompromising maladies in the experience of mankind. During the epidemic season parents, too, can be of help to limit this pitiless scourge. For instance, gatherings, like baby parades and convention meetings could be conveniently postponed until all danger signals of the oncoming of an epidemic have passed. Physical disorders such as acute colds and upset stomachs should be remedied by appropriate medical care. It is expedient that all fruits and vegetables are washed free from any contamination before being served. The use of the community cup and the drinking of unpasteurized milk should be stopped.

The problem of prevention of infantile paralysis encompasses a program in which physician and citizen must work jointly in an effort to eradicate a disease which terrorizes communities wherever it puts in an appearance. In this fight, public health officials, physicians, surgeons, scientists and nurses are combining their efforts to checkmate this terrible scourge, and place infantile paralysis, like many other diseases, on the preventable list.

From Witch Doctor

IN 1400 came the great enlightenment, spreading over the western world from Greece and Italy, as the earlier dawn of civilization had spread over the East. Men began to study themselves and the world about them, and out of this new knowledge arose a new medical science and a new, scientific dentistry.

At about the time that Columbus reached America, many strange, absurd, and disgusting dental practices were still common in civilized Europe. Remedies included cows' dung, hares' brains (generally boiled), snakes' skins and "broth of frogs." But Giovanni of Arcoli had written an important book in which the filling of hollow teeth with gold was mentioned for the first time, some new and more efficient dental instruments were described and the extraction of teeth was recommended only as a last resort. Other surgeons of this period were of a similar opinion, and Giovanni of Bigo made the important observation that a cavity to be filled with gold should first be cleared of all decayed matter.

With the Sixteenth Century, dentistry, in common with the rest of surgery and medicine, entered a new phase of development. Release from ancient notions and methods did not arrive suddenly, but the practitioners of healing were coming to depend more and more on exact observation of natural events and less and less on the precepts inherited from their revered, but often mistaken, predecessors.

In France a great forward step was taken when, in 1596, the Faculty of Medicine of the University of Paris established certain distinctions between surgeons and barbers, and the barber-surgeons ruled that an ordinary barber must call a surgeon into consultation in all serious cases. Examinations for the practice of surgery were required in both France and England at about this time, although barbers were still allowed to extract teeth without examination or supervision. The title of Doctor of Surgery was conferred in France in the Sixteenth Century and probably earlier; that of Surgeon Dentist is mentioned in 1622. Thus, surgeons and skilled dentists were gradually assuming a more dignified place among the professors of the healing arts.

At the end of the Sixteenth Century the tools of scientific observation were increasing year by year. Printing made possible the wide dissemination of knowledge. Ships traveled to all parts of the world, and men hitherto isolated in Europe began to learn the secrets of the East and to explore the vast continents of the West. In that century Galileo and Harvey were born, the one to point his telescope toward the stars and bring on his head the wrath of men who wished to believe always what their fathers had comfortably believed; the other to discover, in the circulation of the blood, a principle revolutionizing all man's subsequent studies of his own body in health and in disease.

All this may seem to have little bearing on the problem of dental ills, yet Galileo with his impudent mutterings about the earth moving around the sun and Harvey giving new life to the "long-slumbering science of anatomy" were symbols and symptoms of an age no longer content to accept without question the opinions of ancient masters.

One of the first men to question the older scientists' uncritical copying of the venerable ancients was Vesalius, best known as the "noble thief," who stole the bodies of hanged criminals in order to pursue his anatomic studies by the only proper method, that of actual dissection. Although he was no dental specialist, Vesalius studied the teeth as an essential part of the human body and dared to contradict several erroneous concepts about

to Modern Dentist: II

By PETER J. BREKHUS

them that had persisted from the time of Aristotle. Another experimenter of the period was the many-sided Leonardo da Vinci, whose studies in dissection were prompted not only by the curiosity of the scientist but also by the desire of the artist to know the exact construction of the human bodies he portrayed in his paintings and sculptures.

The work of these men provided an impetus for that of such eminent anatomists as Fallopius, who from his own observations gave an astonishingly accurate account of the generation of human teeth; Eustachius, whose work on the gross anatomy of the teeth complements that of Fallopius; and Paré, who did more for practical dentistry than any man of his time.

Paré (1517-92) was an eminently practical man. He learned dentistry as a barber-surgeon's apprentice and continued that training as an army surgeon. Not until the age of 37 did he find time to take the examination required for the degree of Doctor of Surgery, and even after gaining it he still gave much of his attention to allaying the dental sufferings of his fellow men; for toothache, he said, is "the most atrocious pain that can torment a man without being followed by death." He extracted teeth with as much gentleness as possible, pointing out that careless operators often succeeded in pulling the wrong tooth and over-energetic ones in detaching portions of the jaw bone along with the extracted tooth. He also cauterized exposed pulps, replanted extracted teeth, and did some efficient work in restorative dentistry. With all his knowledge and skill, however, Paré seems to have done no filling of cavities, except to place temporary fillings in badly decayed teeth to prevent their breaking up while they were being extracted.

At the close of the Sixteenth Century, the common method of dealing with decayed teeth was still extraction. If the extracted teeth were too decayed to render replantation feasible, artificial teeth were provided. The tooth of another person or even that of an animal was implanted in the patient's jaw, or the gap was bridged with various contrivances made of bone, ivory, or hippopotamus tusk and fastened with metal wires. Often these artificial appliances were both painful and unhygienic, creating irritations and infections in the mouths of their unfortunate wearers to such a degree that Peter Foreest, a famous Dutch physician, decried their use altogether.

The physicians and surgeons of the sixteenth and seventeenth centuries were insistent on the desirability of keeping the mouth and teeth clean. For this purpose they recommended various preparations, ranging from a mouth-wash made of water and wine to "a few drops of oil of vitriol" (sulfuric acid). Used even for a short time, the latter no doubt cleaned all the teeth completely out of existence.

In the early Seventeenth Century, Fabricius (1537-1619) and other surgeons filled carious teeth with gold leaf, after having first cauterized the cavity. In the dental literature of this period is found repeated cautions against the indiscriminate extraction of teeth, for while restorative work and complicated dental operations were usually performed by more or less qualified surgeons, mere tooth-drawing was still often left to the barbers, whose instruments were apt to be as crude as their technic was violent. Fabricius reported a typical case of osteomyelitis when he related that "it often happened to him to have to extract, in little fragments, half or sometimes a whole jaw, which had been attacked by putrefaction as the result of the extraction of one single tooth." Moreover, no one in the world had yet seen a germ, and aseptic treatments were undreamed of.

(Continued on page 730)

By LOUIS F. BISHOP Jr. and RUTH V. BENNETT

Living with Heart Disease: I

Strange as it may seem, long life is not unusual for men and women with heart disease of certain definite types. Despite the fact that heart disease accounts for the greatest number of deaths, there are still exceptions: Here are some of them

"CAN A PERSON live a long time with heart disease?" a man asked his doctor. "Yes, indeed" was the reply. The man was 53. He had just been rejected for an increase in life insurance—turned down—due to a heart ailment.

Strange as it may seem, long life is not unusual for men and women with heart disease of certain definite types. Despite the fact that heart disease is the number 1 cause of death, together with the statistical data as to insurance risk for persons with cardiac defects—paradoxical as it may seem—there are exceptions to the rule.

The outlook for longevity in heart disease is not at all gloomy when viewed from the range of cases followed over the years in a private practice in cardiology. A happy life of three score years and ten—and then some—can be attained if the days of such cardiac "risks" are marked by moderation.

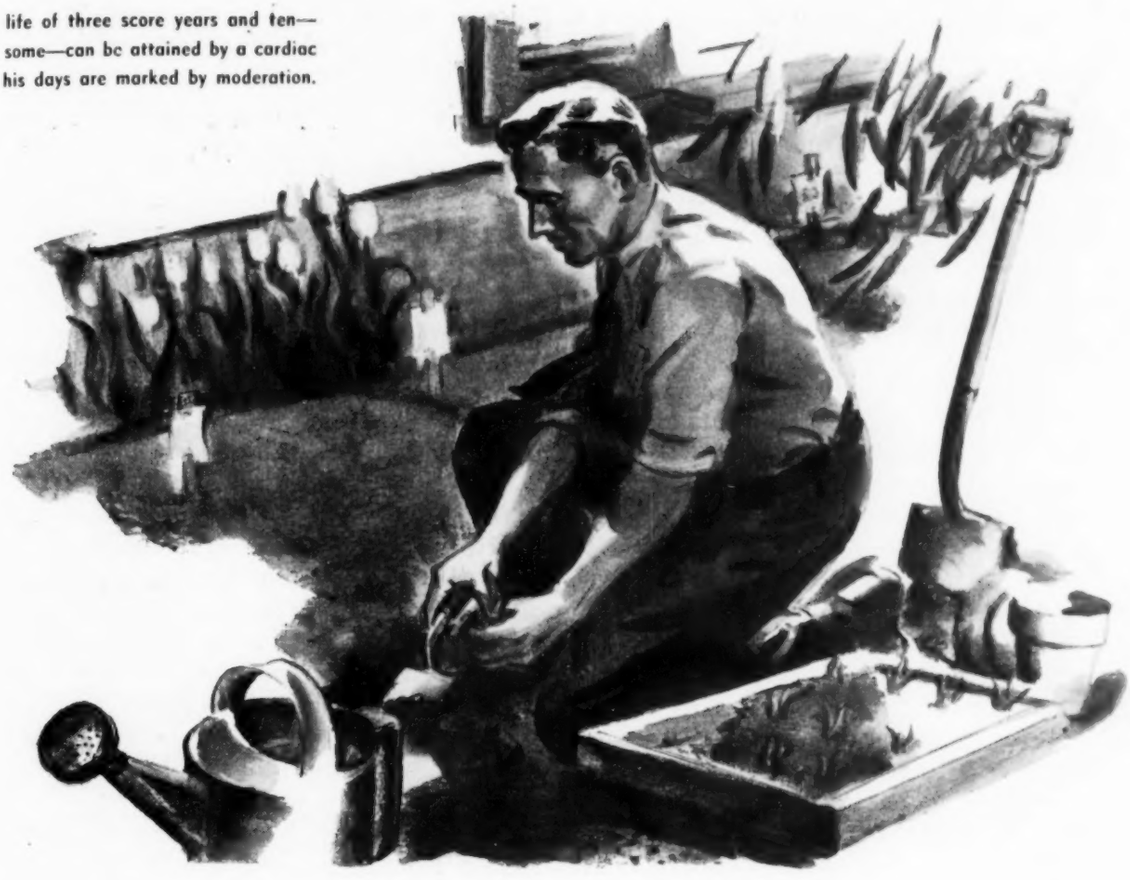
The human heart can seem to leak, to leap, to palpitate. Hearts can hop, skip and jump and yet life goes on. A man may have a recognized disease of the heart for thirty years, live a comparatively comfortable life, be of service to his family and his country, and in the end succumb to an infection of his big toe!

In any heart specialist's office there may be found year-by-year records of countless persons who live comfortably with some type of heart disease. Perhaps this exceptional longevity may be due to the knowledge of the patient that his brakes will not hold if he lives at too fast a pace. It may be due to the right-about-face that he makes when he is first told that he has heart disease. There may be an X factor yet to be solved. The sudden shock of hearing that you have a defective heart is like being wakened from a sound sleep by the clanging of a fire alarm. You know full well that the best thing to do is to salvage what possessions you can—and retreat to a safe spot! This may sound like an ignominious retreat from life, but it does not necessarily mean that you must become inert. Life can be tolerable with heart disease.

Sudden death in heart disease shares dramatic front-page news with unhappy marriage. Who is interested in the humdrum instances of happy wedlock? Who is there to care about the hope-inspiring life stories of men and women who often live to a ripe age after accepting the ultimatum of heart disease at 50? Yet it is a fact that most of them die in bed without deathbed fanfare. "They fold their tents like the Arabs, and as silently steal away."

These cardiacs come from all walks of life—from the highways and the byways. Heart ailments may be found among millionaires or machinists, accountants or actors. The important point is that "rich man, poor man, beggarman, thief" all may have heart disease—yet all want to live. The sad part of it is that the rich man, chauffeur, doorman and chef all

A happy life of three score years and ten—and then some—can be attained by a cardiac "risk" if his days are marked by moderation.



may have heart disease, but they don't know how to live.

A brief for longevity in heart disease would seem to refute life insurance statistics in many instances. Admitting that we are citing exceptions, such everyday observations in a heart specialist's experience may serve to give new hope to the person who has just been "turned down" or "rated up" for life insurance on account of a heart ailment. The gloom of the "risk" who was too "risky" for insurance may be mitigated by describing the days of others who may be in the same life-boat. Every one is familiar with the heartening story of the man who was given one year to live with a heart murmur. Yet he lived to see three of his doctors, who had given him only 365 days of life, one by one shuffle off this mortal coil—while he twenty years later was still jogging along with his murmuring heart.

A benign murmur is not the only heart defect with which a man can accumulate years. Some types admittedly have a shorter expectation of life than others. It is known that longevity may be found in examples of auricular fibrillation (a cardiac irregularity which may come from some form of heart muscle debility) and with arrested heart disease. In this category belong the congenital, goiter heart, rheumatic heart and arteriosclerotic groups. These types cover a large number of diseased hearts. One might seem to fabricate when speaking of longevity in a man with a fibrillating heart, but such are the records of persons whose hearts have fibrillated for twenty or thirty years. Truth rivals fiction in heart disease.

A striking example is that of a physician, a widower of 84. He has led a busy, productive life, teaching medicine, running a sanatorium and enjoying life to the full. At 60 he found he had a heart ailment, this same auricular fibrillation, often considered a serious heart defect. He decided on taking care of the heart he had. He gave up his too strenuous life and concentrated on gardening. He is still enjoying his days and nights happily, purposely forgetful of the hazard of a handicapped heart. Perhaps one of the secrets of his successful quest of years is revealed in his own

words: "It is characteristic of those well on in years to procrastinate, even to neglect pleasant duties . . . I may be mistaken, but on my eighty-fourth year I think I am in better shape than I was five years ago. It is long since I have had any suggestion of auricular fibrillation, or indeed any cardiac manifestations of a disturbing nature." Let's see what he does with his days. Let him describe: "I feel that I have made some gains, in that I can buffet heavy waves, can personally attend my roses, spray, dig in the ground, pull weeds, etc., and am steadier on my underpinning than when I saw you last." Obviously not a man to pity!

Another gentleman, an industrialist in Hawaii, has just reached his eightieth year. He is fond of fishing, and recently gave a party to sixty people to celebrate his birthday. He has successfully weathered an attack of heart failure five years ago. He is cheerful. As he says, "I attribute my hale and hearty state of health on my eightieth birthday to the perfect climate—and to the heavy fishing!"

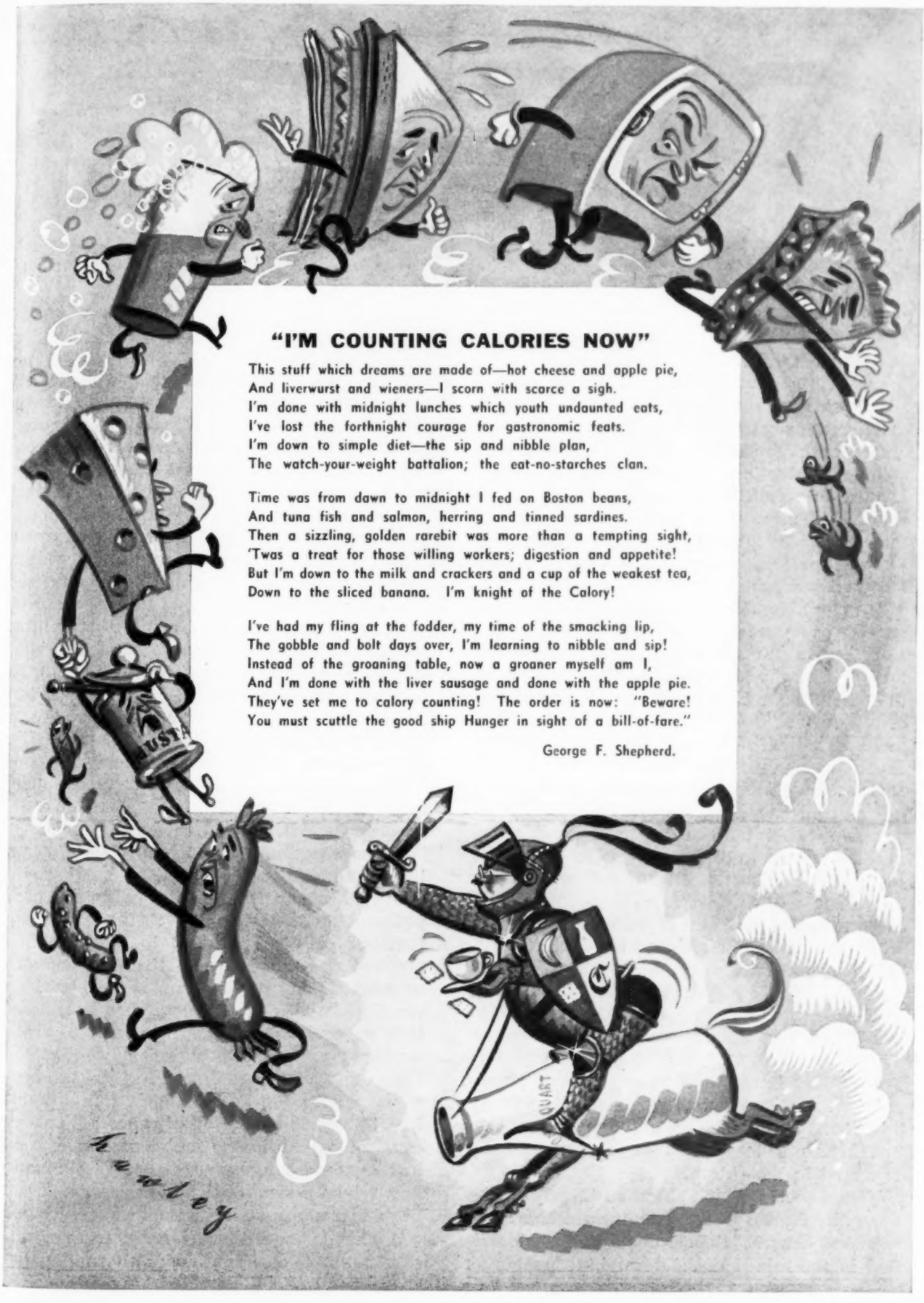
Is it not encouraging to any man freshly aware of a heart defect at 50 to look forward to raking the garden for weeds or to casting a fly for a fish at the supposedly hoary age of 80? Is it not better far to look forward to a venerable age than to shiver at statistics, or to tremble at the threat of sudden death?

The statistics of life expectation are interesting in that they give the average person something to shoot at. Dr. W. B. Aten of the Security Mutual Life Insurance Company gives us the average length of life of any group of people at a given age from the American Experience Table of Mortality. For example, "at age 35, the expectation of after life is 31.78 years. At age 50, it is 20.9 years." He states that this method of determining probability of life is like a lot of other formulae which are somewhere nearly correct but not accurate. A simple way of computing on the average the years that may stretch ahead is to take ⅔ of the difference between your present age and 80, and add the result to your present age. If you are now 50, subtract 50 from 80, leaving a remainder of 30. Take ⅔ of 30, or 20, and add to your present age of 50, making 70 years that you should live. So it's up to you to take care of your future precious 20 years! And so much the more if you have heart disease at 50!

Women, in general, are known to have two or three years more expectation of life than men. One woman of 80 years has led a life singularly happy in every respect. She was loved by all. Until she reached her fifty-fifth year she seemed the ideal of healthy womanhood. At that time, now twenty-five years ago, symptoms of palpitation and short breath on exertion led to an examination which revealed that she had had rheumatic heart disease affecting her mitral valve, accompanied by auricular fibrillation (a rapid and irregular heart). Curiously enough, at the age of 80 she died of another type of heart disease, coronary thrombosis. Though she was under medical care for twenty-five years, these years were full of zest. For 25 years she knew that she had a defective heart. She summered on a houseboat which was probably conducive to her well-being. When she came for a monthly physical check-up she always greeted the attendant in her doctor's office with inquiries about their health and welfare, taking as much interest in the romance of the young office nurse, as in her own children. She often received letters and flowers from her "boys" (now middle-aged men) whom she had taught in Sunday school years before. She had as much interest in other mothers' sons as in her own.

Hypertension, or high blood pressure, of certain types, often runs hand in hand with long years. Take these two instances: The first, a lady of 93, has had a high blood pressure for many years, yet she ardently enjoys a good horse race, and apologizes for carrying a cane! For fifteen years she has been occasionally examined as her symptoms demanded. Intelligent care is making her ninth decade as happy as her eighth. The second lady is 89 and, in addition to her high blood pressure, she has an enlarged heart. The moderate amount of digitalis she has been taking for many years as a tonic apparently has been preventing heart failure. This lady continues her social life and is seldom out of the running. The story of her heart beat is graphically illustrated by serial electrocardiograms. Such is the activity of some of our octogenerian and nonogenarian maids.

The life of another lady, 69, is worthy of comment in that she has been examined over a period of twenty years. During this time she has had not only a high blood pressure but a type of heart block which is usually fatal in a few years. At the age of 49, when her heart block was discovered, medical men might well have shaken their heads over her expectation of life. But she is like *(Continued on page 757)*



"I'M COUNTING CALORIES NOW"

This stuff which dreams are made of—hot cheese and apple pie,
And liverwurst and wieners—I scorn with scarce a sigh.
I'm done with midnight lunches which youth undaunted eats,
I've lost the forthnight courage for gastronomic feats.
I'm down to simple diet—the sip and nibble plan,
The watch-your-weight battalion; the eat-no-starches clan.

Time was from dawn to midnight I fed on Boston beans,
And tuna fish and salmon, herring and tinned sardines.
Then a sizzling, golden rarebit was more than a tempting sight,
'Twas a treat for those willing workers; digestion and appetite!
But I'm down to the milk and crackers and a cup of the weakest tea,
Down to the sliced banana. I'm knight of the Calory!

I've had my fling at the fodder, my time of the smacking lip,
The gobble and bolt days over, I'm learning to nibble and sip!
Instead of the groaning table, now a groaner myself am I,
And I'm done with the liver sausage and done with the apple pie.
They've set me to calory counting! The order is now: "Beware!
You must scuttle the good ship Hunger in sight of a bill-of-fare."

George F. Shepherd.

Do You Fear

NO ONE GROUP of people seems to be exempt from cancer. It would appear that some families have never had a case in their past medical history, while in others each generation seems to reveal one member presenting symptoms of it. However, it must be recalled that patients have died of cancer which was misdiagnosed, or died of some intercurrent disease while cancer was likewise present. Also, some patients were incorrectly diagnosed as having cancer.

So often one hears of cancer being hopeless because every member in a certain family died from it. But further investigation into the history of a supposed incurable case shows that the patient refused to seek treatment until the condition was well advanced, or he failed to have periodic health examinations. Often the dread of an operation prevented the patient from securing medical care, or not infrequently he resorted to quack treatments. Needless to say the effect on other people who knew nothing whatever of the case is to create the feeling of the incurability of cancer. Before criticizing a physician for his apparent inability to cure a patient it is proper to determine when the patient first visited his doctor.

Unfortunately, families in which cancer has occurred live in constant fear of the disease. These people should be all the more alert to symptoms and obtain medical advice early. They should not wait until definite complaints are evident but should have frequent physical examinations. Relatives should profit by what took place in the past. It depends entirely on them not to have past errors tragically repeated in the future.

Two diseases which share so largely in the mortality figures in this country are heart disease and cancer. Cancer should not be classified in the minds of clear thinking people as untouchable, disgraceful, or, most important of all, incurable. While people freely mention the existence of heart disease in a patient the collective term "heart disease" is a misnomer for it places all types of heart trouble in one class. Some forms of heart disease are more serious than others and the fact that there is no understanding of this differentiation causes the words "heart disease" to be misinterpreted.

Likewise the term cancer could be popularly denoted to include all kinds of tumors of a malignant nature. Malignant tumors also have various pathologic forms, some of which are amenable to the modern methods of treatment, while others are more resistant to curative therapy. Definite symptoms are produced by cancer, depending on where the tumor is situated and on its location hinges the accessibility of treatment. Only by persistent and continuous education of the public to the many types of cancer that are encountered will the struggle for early treatment be successful.

When a person begins to complain of symptoms referable to his heart, he seeks advice mainly because it interferes with his occupation. A patient who neglects the early symptoms of cancer continues to work without medical consultation. By the time he must stop his activity due to his marked symptoms, the likelihood of a complete cure is lessened. It is a peculiarity of some patients to visit a doctor only when their symptoms conflict with their daily routines. Pain also brings patients to the doctor, but unfortunately this symptom is not an early indication of cancer. Far more cases of cancer in the incipient stages would be diagnosed if such were the case. No matter how trivial a symptom may appear, visit your physician to ascertain its importance.

A change in the bowel habit from normal elimination to constipation, or alternating diar-

Cancer?

By BERNARD BEHREND

rhea and constipation, does not seem of great significance but such symptoms suggest investigation of the colonic tract. Bloody bowel movements may be present and should not be ignored as just bleeding hemorrhoids, for cancer might be located higher up in the intestinal system. Indigestion, a popular but vague word, can obscure cancer of the stomach; therefore it behooves patients not to regard their complaints as merely indigestion. This is certainly not a time for experiments with such home remedies as patent medicines, alkalizers and laxatives.

Any bleeding from the urinary passage in patients should make a person see his physician. In women, abnormal uterine bleeding or discharge before, during or after the menopause must never be considered a necessary part of the life cycle which every woman eventually enters. Many women have died from cancer of the cervix or uterus because they had believed their symptoms to be natural for their age.

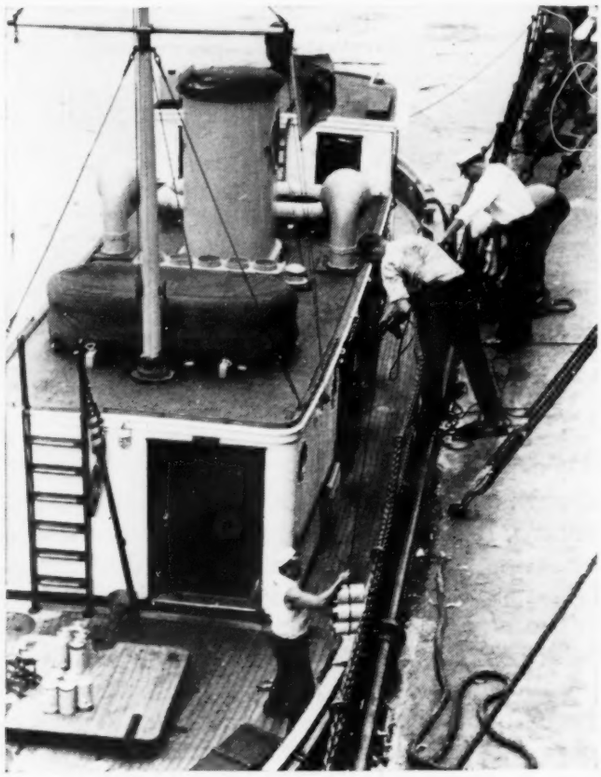
Breast tumors spread fear in the minds of every woman. It must be explained to each woman that breast tumors may be benign but that some are malignant. The practice of massaging or of baking a breast tumor has all the elements of quackery. The modern practice is to excise these tumors and examine the tissue under the microscope to determine whether malignancy is present. This report determines whether further surgery and irradiation is necessary. Even though the tumor is benign, it is far better to remove it completely than to have the patient continually feel the tumor and live in constant apprehension that it might undergo malignant changes.

Chronic sores on the face, cheek, nose, tongue or skin that do not heal, or which bleed easily on the slightest injury, should be examined by a physician. This is one type of cancer, if diagnosed early, that can be treated and cured with only the slightest discomfort. Yet many people foolishly persist in applying home remedies for their skin disorders, often with harmful consequences.

A form of cancer that has increased is the type found in the lung. The symptoms are coughing and expectoration usually with blood and perhaps pain in the affected side of the lung. Other diseases produce the same symptoms so it is necessary to take an x-ray of the chest to determine the diagnosis. To substantiate the diagnosis a bronchoscopic examination is performed to remove a piece of the tissue for inspection under the microscope. The only cure thus far for this form of cancer is surgical excision of the diseased lung.

A misconception which has proved costly is the belief that cancer occurs only in older patients. This theory has long been discarded, for cancer does appear in steadily growing numbers among younger people. The only compensation for this apparent increase in younger persons is that the younger patient is more able to withstand a major operation, and the postoperative complications so commonly encountered in older people are much lessened in the lower age groups. If doctors are to be at all successful in this unceasing war against cancer, it must be impressed on young and old alike that the disease draws no age limits. It is, of course, much more common among older persons.

Now that methods of diagnosing cancer are more universal and accurate, the probability of detecting the disease in its early stages is more likely. A complete examination for the determination of cancer requires considerable time, effort and refined laboratory technic, including x-rays. *(Continued on page 752)*



ABOVE: Fumigation powder is put on ship's deck.

BELOW: Two men of the federal fumigation crew pump hydrocyanic acid gas into a rat harborage.

The WAR on

ARE RATS AMERICA'S number one health menace in the animal world? You would think so if you visited certain federal laboratories in Washington where a fresh campaign is being waged against them.

Small wonder for that. During the past four years rat-bite fever, also known as murine fever, has been spreading northward and inland from its former stronghold on the Gulf and Southeastern coasts. This year it has invaded Washington, D. C., and while only two cases have been reported thus far, the potential menace to the entire nation of this health-destroyer can scarcely be exaggerated.

Leading cities from coast to coast, in cooperation with the United States Public Health Service, are now launching vigorous eradication campaigns to prevent this dread ailment from spreading further. All manner of people are involved in the new warfare: sanitary engineers, city, county and state health departments, bacteriologists, physicians, farmers, business men, boy scouts and just plain "folks."

While stressing the health aspects the federal officials also point out that the four-legged trouble-makers probably are the nation's most destructive animal gangsters, destroying property, food and merchandise to the tune of millions of dollars annually. They are fond of finest linens, leather goods and the glue in expensive book bindings. It is not unusual for a hungry rodent to gnaw through a stack of linens, then turn to nibble on a $100 suitcase or golf bag and finally devour bits here and there of a large selection of high priced books.

This animal is the world's most notorious disease carrier, with perhaps two exceptions, the tick and the flea. And when it is realized that the rat, in addition to its own ability as a carrier, is often infested with both of these death-dealing agencies at the same time, its

BROTHER RAT

By JAMES NEVIN MILLER

The modern Pied Piper wears a mask. On shipboard, where fumigation operations are under way, one of the members of the fumigation crew carries a can of fumigant and his flashlight. The lethal nature of the hydrocyanic acid gas makes masks essential.

U. S. Public Health Service

true worth as a human health menace is fully appreciated.

No less than seven major diseases and illnesses are known by medical science to be transmitted or caused by rats and almost a dozen more are under suspicion. Besides bubonic plague and typhus fever, the list includes pneumonic plague, jaundice, parasitic mange, tapeworm and perhaps foot and mouth disease.

They've been accused of carrying the germs of sleeping sickness and leprosy, but there's no agreement among scientists thus far that the rodents ever actually transmitted these great life snuffers to humans. Rats also are suspected of carrying infantile paralysis and several other kinds of infectious germs which they leave on human food. However, it is generally agreed that they are responsible for the transfer of certain ailments to other animals, notably equine influenza.

For several years rat-bite fever has been spreading northward and inland from its original stronghold in the deep South. Its recognition as a communicable disease, subject to control, is recent. According to the Public Health Service, the cause is a spiral organism which can be found in the infected animal's saliva and which is injected into a human being when a rat bites him. No inoculation has proved practical to prevent any one from catching rat-bite fever, nor is there any remedy for it. It can be recognized by a rash that spreads across the abdomen and around

the small of the back about five days after the fever starts. The symptoms and discomfort are similar to those of influenza but far more severe.

The recent achievements of Tennessee and Georgia in rat eradication work as a disease preventive should serve as an inspiration to the entire nation, says the Public Health Service. H. C. Essick, Public Health Service specialist whose job is to organize one rat-killing campaign after another, has spent weeks and sometimes months at a time in Nashville, Memphis and Atlanta, working with the city health departments in their fight against the spread of the disease.

Nashville is conducting a relentless fight against Brother Rat. The present eradication project, concentrating on areas believed to be infected with fever, is a follow-up of a program started in November 1939, under United States Public Health Service supervision. It is hoped to continue the project indefinitely.

Today the city health department urges all Nashville residents to keep their premises clean of garbage, and businessmen are asked to have their buildings rat-proofed. Proofing can be done cheaply and the economic and health savings resulting therefrom are tremendous, the department emphasizes.

Some months ago, under Mr. Essick's direction, a crew of Nashville health inspectors conducted what was termed the most systematic war on rats in the city's history. Essick estimated that 17,304 predators were destroyed during the campaign. Premises of every conceivable type of building were cleaned, trash and garbage hauled and destroyed in a strictly sanitary fashion and thousands of rodents were trapped, poisoned or gassed.

In Memphis, recently, Mr. Essick supervised the start of a similar campaign. At last reports, 1,000 traps had been placed outside large buildings from which rats had been blocked, to keep them from spreading to nearby structures and also to provide specimens for laboratory checkup on the percentage of disease carriers.

Although there have been two cases of rat-bite fever as close as Jackson, Tenn., and one in Tunica County, Mississippi, in recent months, there have been none in Memphis since 1937, when two cases were reported.

"We believe the disease is being spread by modern transportation methods," Mr. Essick pointed out. "Rats even travel in private automobiles. Whether they are infected can be determined only by catching them and making laboratory tests. It is no trouble at all to trap them. They're creatures of habit. They always travel along a wall at what we call a 'run.' It is easy to train men to recognize these runs and to set the traps there. An effective procedure is to dampen a cloth with a special oil and touch it to each trap to remove the human odor and provide a tempting smell."

If every person in Memphis killed a rat today there still would be a substantial number of the rodents left to destroy thousands of dollars worth of property and food in the city, the health department announced. Rats are prolific, producing an average of five litters annually, of four to nine rodents each. The Public Health Service estimates that two rats reproducing over a period of five years will increase to over 940 billion animals, if the parents are healthy.

Last January twelve Memphis business houses, surveyed as a part of the city's rat control program, reported they had killed 862 rodents.

Everett C. Handorf, Memphis sanitary engineer, explained that the 58 business concerns doing rat-proofing work in January showed an average of only $3 was required to proof restaurants and cafes, $6 for grocery stores and about $200 for food manufacturers. He pointed out that the health department has interested numerous business men in appointing one of their employees to make regular weekly reports on rat conditions and proofing programs. Some even offer a 5 cent bounty for each rat killed on the premises.

Field men make regular surveys of buildings and turn in detailed reports to the health department for action. As the rats are killed, the department takes charge of them and checks the bodies for fleas. The fleas are sent to the United States Public Health Service test station at Albany, Ga., for analysis to determine whether the rats are carrying infections.

Apart from the health aspects of the flea-bearing rodents, health department officials point out that a rat eats an average of $2 worth of food each year. Multiplied by 300,000, the estimated number of rats in Memphis, this would mean the city is unwittingly spending $600,000 annually to support the pests.

For the past several years health authorities of Atlanta, Ga., have been fighting a valiant battle to rid the city of rats. No official figures for 1940's number of *(Continued on page 718)*

NOSES

In anthropologic studies, next to the eyes and forehead, the nose is the most important part of the physiognomy. No other index differs so much individually and racially

By S. R. WINTERS

UNCLE SAM may be poking a "long" nose into human affairs but scientifically the old gentleman's traditional "Roman" nose is all wrong. Dr. Ales Hrdlicka, famous anthropologist of the Smithsonian Institution, has found that instead of the decidedly convex (arched) nose with which Uncle Sam is always pictured, it should be rather straight, or only moderately convex.

Uncle Sam, as a symbolic figure representing the typical American man, with a few generations of Americans and a probable Anglo-Saxon ancestry, should comply with this composite, Dr. Hrdlicka says. In most respects, he points out, the old fellow is all right but he has never encountered, in the groups included in his research, an Uncle Sam nose.

The extensive study was undertaken because a reliable standard was needed for comparison in anthropologic work in this country. Next to the eyes and forehead, the nose is the most important part of the physiognomy, particularly when this is regarded in profile. There is no other feature which differs so much individually and racially.

In conducting his research work on noses, Dr. Hrdlicka utilized two groups which he classified as "Old Americans" and "Not Old Americans." The term "Old" in this instance has no reference to age. To make certain that only those would be included in the series whose families have long been subject to the effects of the American environment, only those persons were examined who, on both sides, were American for at least three generations; in other words, those whose parents and grandparents were born in this country. To avoid including persons not fully developed or decrepit, age limits from 24 to 60 were established. Other than choosing healthy, adult descendants from old American families, there was no selection.

Writers and illustrators have made frequent efforts to define a hypothetical American type, and have even arrived at certain crystalized conceptions such as the "American Girl," Uncle Sam, etc. The Southerner in particular, the Yankee and the Westerner are believed each to have distinctive facial and especially nasal characteristics by which in the majority of cases they can readily be identified.

Some persons even have put forth the theory that Americans will in time grow to resemble Indians; this idea being based on the conjecture that environmental conditions which made the Redskin appear as he did should have the same effect on other inhabitants of this continent. Dr. Hrdlicka says there is no basis for this theory.

The results of the detailed study of the physical features of man are distinctly valuable, both in science and in application. They show clearly that no definite, already formed, strictly American type or subtype of white American as yet exists.

By "nose shape" is meant the form of the dorsal ridge of the nose. This form is interestingly variable, particularly in the white races. The variations are due, generally, to the different developments of the bony and cartilaginous parts of the nose, and to some extent to the soft parts of the organ.

The shape of the nose changes more or less, particularly in men, from birth to old age. The shapes may be of a generalized racial character, they may be hereditary family peculiarities, or they may be individual differentiations for which no cause is discernible. In a

group of prevalently elderly males, the shape may be regarded as that of the fully matured plus some old-age modifications.

There are four main types of noses: concave (indented), straight, aquiline or convex—usually described as hooked and the opposite to concave, and the wavy or concave-convex. The concave as well as the convex may be moderate, medium, or pronounced.

The concave is the infantile form. It tends to become straightened as the person grows older. An upwardly inclined septum (the dividing wall which separates the nostrils) is infantile in character; if it inclines downward, it indicates old age. From this standpoint, there are many more infantile females than males.

The nasal root is located between the eyes. The depression at this point is a feature which at times adds considerably to the character of the face. In the female where the smooth prominence on the forehead just above the root of the nose is less developed, the depression is frequently shallower and wider than in the male. The higher the bridge of the nose in either sex, the less marked is likely to be the root depression. In the artist's "Greek" nose there is no depression at the root of the nose. Such cases in reality, however, are seldom encountered.

It is true that climatic factors affect nasal characteristics. The nose is mainly an organ of respiration, and as such is largely subject to more influences than the rest of the facial structures. The air passing through the nose is moistened, warmed and partly filtered of foreign particles, all of which renders it less irritating to the bronchi and lungs. The narrower the nasal passages, the more effective they are for these purposes. In the tropics, where air is generally warm and moist, and where at the same time the freest possible respiration is needed, native noses are usually broad; the noses of persons living in moderate zones are prevalently of medium width; in cold regions they are generally narrow. The broad nose is also usually short, with a low bridge. The narrow nose is long in the white race and frequently prominent. These premises, authenticated by detailed measurements, are of material aid in racial classification.

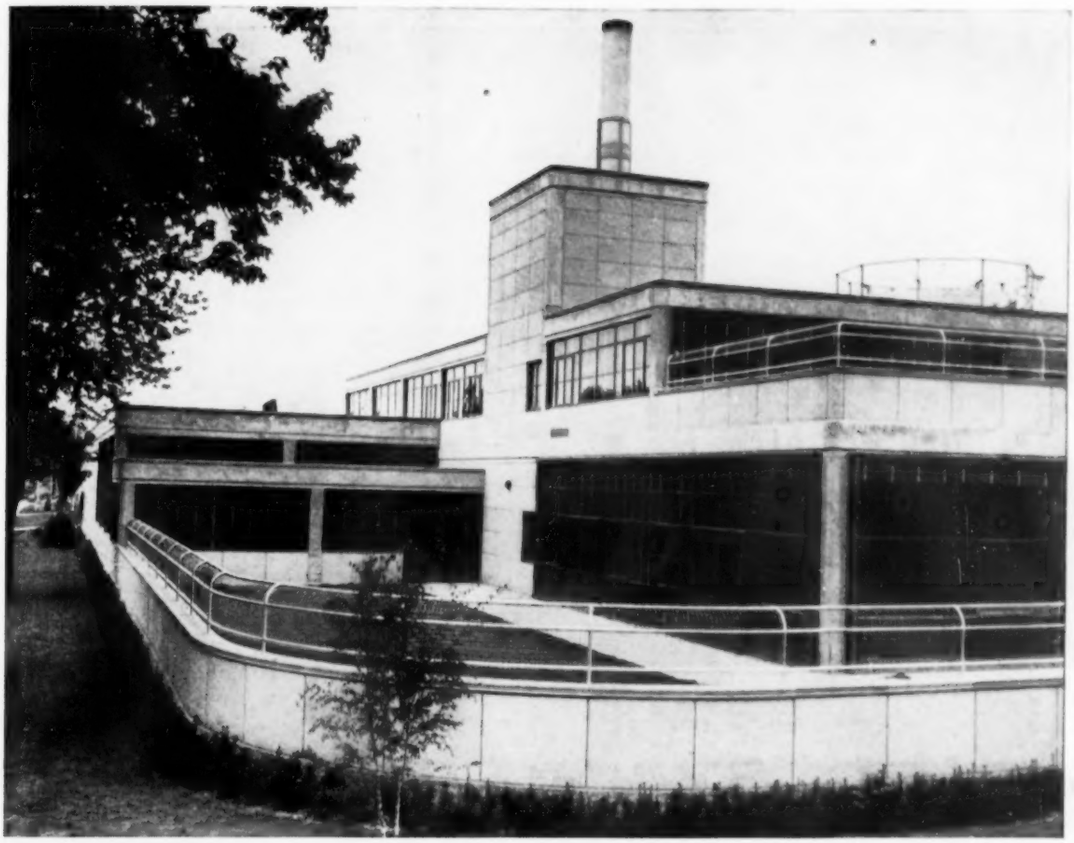
The nose grows with age in both length and breadth, and the nasal index becomes higher with age. In women, the changes in both nasal length and breadth are slightly greater than in men. Tall men have bigger noses; tall females have longer noses, but not wider ones than short women. Nasal height corresponds closely to the length of the face, and not with the stature of the person; that is, a tall man or woman nearly always has a longer face than a short person, and consequently, a longer nose.

An interesting aspect of Dr. Hrdlicka's study is the discovery that the noses of the Old Americans were almost exactly like those of the English. Both of these groups have relatively long noses, being surpassed in that feature only slightly by Greeks and Russian Jews.

Russians may authoritatively lay claim to the shortest noses. According to Dr. Hrdlicka, so far as nose length is concerned, this is the way they line up: Russian Jews have the longest noses, Greeks next, Old Americans and English (practically the same), Armenians, Croatians, North Italians, South Italians, Hungarians, Rumanians, Irish, Poles, Russians. The measurements of the nationalities indicated were made from recent European immigrants.

Relative to stature, size of face, or height of nose, the width of the noses of Old Americans is less than medium. The longest nose in relation to stature is in the Southern Italian, "in whom the absolute breadth of the nose is close to the maximum." The Old American nose, therefore, may be characterized as somewhat high and fairly narrow. The English nose, while approximately the same length, is slightly narrower.

In his latest research on the subject, Dr. Hrdlicka utilized 150 members of the National Academy of Science, to develop some interesting results. Academy of Science members who are Old Americans and not Old Americans have longer noses than outside Old Americans. This is because the Academicians are taller, and because of their considerably higher mean age. The Academy members tested had an average age of slightly more than 59 years. When the nasal measurements of Academy members, who also fulfilled the requirements of Old Americans, were compared with those of uneducated mountaineers, also Old Americans, distinct differences were found. Culture and intelligence appear to have a definite bearing on noses. The noses of the members of the Academy are in every respect closely similar in the Old and the Not Old groups; they are also like the noses in the more cultured and aged Old Americans. *(Continued on page 752)*



A child arrives at the Charles Boettcher school in one of the taxis furnished to call for and deliver the children safely.

The Charles Boettcher School

By GRACE IGO HALL

CURLY-HAIRED, 10 year old Charlene peered anxiously out of the front window of her home in Denver, Colo., shortly before 8:30.

"Mother, isn't it 'bout time for the school bus man to come?" she exclaimed excitedly. "I can hardly wait for him to get here."

Over and over again similar words were being repeated in Denver homes that morning by other crippled children who were going to Denver's new school for crippled children—The Charles Boettcher School. These children were handicapped by such afflictions as cerebral palsy (spastic paralysis), infantile paralysis, cardiac disturbances, muscular diatrophy and osteomyelitis.

This new Charles Boettcher School for crippled children is a progressive school, with organized classes from kindergarten to college levels. The building, constructed of pale green concrete and glass, is one of the most beautiful and best equipped schools for crippled children in the world.

Crippled children walk up a long sloping ramp instead of climbing stairs to reach the upper level.

Between classes the children stop in the long hallway overlooking one of the school's open courts to talk to one of their teachers.

Every item of its equipment, the arts and crafts shops; the sunny schoolrooms, with adjustable desks and chairs; the outdoor grassy playcourts adjoining each schoolroom; the large auditorium; the well-equipped library; the cheery cafeteria; the long sloping ramps, instead of stairs, to reach upper floors; the conveniently placed rails along halls to which little hands may cling as crippled children move along—all were designed to bring comfort to handicapped children.

Mrs. Catherine Hays, the principal, took me to see the kindergarten first. As we entered the room, sitting at her desk, a little girl with golden hair brushed a ringlet from before her eyes, as she moved her small leg (which is stiff at the knee) into a more comfortable position on the extension rest built securely beneath her desk.

"Have you finished coloring your tree?" the teacher inquired as she leaned over the child.

"Just almost," the child answered. "See!" Her face beamed and her eyes sparkled as she held up her work for us to see.

In this sunny schoolroom, with its bordering wall of glass set in a metal frame, are specially designed, adjustable desks. The combination desk-seats are constructed so that the children wearing braces or using crutches will have no difficulty in getting in or out of their seats. A child with one leg shorter than the other, or a stiff one, is given a seat with a

Photographs by Floyd McCall

Note the happy, contented expressions on the faces of these crippled children as their class is conducted in much the same manner as in other Denver public schools.

special rest for his heel, enabling him to place the crippled leg in a comfortable position. All the seats are built low and placed with due respect for the convenient moving about of wheelchairs.

Down the long hall from the kindergarten was the workshop. I heard the tinkle of merry laughter as we entered this room where occupational therapy is provided for the pupils: weaving, clay modeling, woodwork and painting.

"Mrs. Hays, I can't get one of this dog's ears to look right," one boy, with a brace fastened on his lower left leg, said as we passed by.

Mrs. Hays paused and pursed her lips, as she considered the clay model dog he held. "Let's see now; wouldn't a little hard pat right here—so-o—on the back of its ear, make it look better?"

"Why, Mrs. Hays, that does fix it, doesn't it?" the boy grinned in surprise.

Seated nearby, at a long, wooden work table was a boy who had had scarlet fever when small, which left him with a weakened heart and necessitated his being watched closely to guard against overexertion. Deeply interested in his work, he was weaving a beautiful Indian-design rug on a wooden loom. At his left was a brown-haired boy who, since an automobile accident when he was 2 years old, has had to wear an artificial limb. He showed me how to turn out a vase on the potter's wheel.

Next we visited the schoolroom where a group of high-school, teen age youngsters were having a test in mathematics. Boys and girls work over the same questions as are given to boys and girls of Denver public schools.

In the classroom where children afflicted with cerebral palsy attend school, many children of different ages worked over their desks. Most of these children had been injured in some manner at birth. Generally such children, Mrs. Hays explained, suffer from confusion of control which, although it may affect their hands, speech, facial movements and posture muscles, does not necessarily affect their mental efficiency. Thus, with spastic cases, each youngster needs help peculiar to his own handicap, with medical surveillance incident and essential to each child's predicament.

"That little boy over there," explained Mrs. Hays, "indicates how we may help these spastic cases." A child at a comfortable desk was, from all appearances, having a delightful time coloring with crayons. "You will observe his hand control is uncertain and unsteady, so he is given large crayons which do not break easily."

Also pointed out were numerous other spastic cases which were being greatly helped. A little 12 year old was furnished with a blotter covering his desk to stop the rattling sounds which his small, nervous hands cause without such an eliminator. A 16 year old young lady who was unable to hold open the pages of her textbook has the sheets held in place by a rubber device. Another, a 10 year old child who can only use one hand, has his text papers held securely to his desk by a tongue depressor laid on the edge of the page and clamped by a screw clamp at one end.

In the hall my attention was suddenly drawn to a small child who, with the use of a cane, was leisurely walking up the gently sloping ramp leading to the second floor. As I watched him my heart seemed suddenly to jump into my throat.

Observing my concern, Mrs. Hays explained, "There is nothing to worry about. The ramp slopes so gradually that it is almost as if he were walking on a level surface." She went on to explain that electric elevators are used for the boys and girls who have to be moved about in wheelchairs.

When Mrs. Hays and I entered the two large, sunny rest rooms that contain eighty cots and adjoin each other, I observed how quiet it was. The children rest here every day for an hour or longer, according to the doctor's orders. One little boy smiled a half-toothless grin at Mrs. Hays and myself; another child, a little girl on a cot in the room next door, blinked sleepily; while a small boy across the room was sound asleep.

Next we visited the large cream-toned auditorium where these crippled children carry on school debates and put on their own plays. Close by the auditorium is the well-equipped library that is not only beautiful but, like all public school libraries, has been constructed for utility.

What a busy place the lunchroom is at mealtime. It takes no coaxing to induce these hungry children to eat. And the element of surprise in their meals helps to make the food taste better. Perhaps it's an especially prepared custard, or shimmering red gelatin, or a tasty chocolate milk shake.

Since the day The Charles Boettcher School opened its doors to *(Continued on page 726)*

By E. M. GERAGHTY

If the Doctor says "It's Gout"

. . . he'll probably prescribe a modified diet. But don't expect to see or feel results from a diet of this kind in a few weeks, when your condition has, in part, resulted from eating habits of many years

"DOCTOR JACKSON is sending a patient to you for a diet," said the voice over the telephone. It was not long before the patient himself appeared in the doorway. It was Charles Bronson, civic leader, model citizen—and incidentally, the father of one of my best friends. Except for an irritable expression, he looked exactly as if he had stepped into my office direct from the society page.

"Well, well, what can we do for you? Want to reduce, or to put it on?" I laughed.

He took two more steps into the office, his mouth doing a twitch at each shuffle.

"And why the walking stick—or is that the latest fashion tip from Washington? Come in. Sit down. Tell us all about it."

"No, indeed, I'm not affecting any style with this cane," as he limped across to a chair—"unless it is the latest thing for gouty oldsters."

"Gouty oldsters?"

"Well, maybe I won't admit to the second part, but the gout can't be denied. Doctor Jackson pronounced it, and this confounded foot won't let me forget it for a minute." He pointed with his cane, "It's poor man's gout, though, acquired while staying at home reading."

"Of course!"

"Anyhow, Doctor Jackson wants you to give me a diet. Here is the slip he gave me."

I read: For Charles Bronson, weight 185 pounds. Rigid low purin diet.

"Will you follow this diet if I write it out?"

"Of course I will. Do you think I like hobbling around like this? I'm planning to attend some of the big games. I'd look nice going like this wouldn't I? All I'd need would be a placard 'How the Old Grad Shouldn't Look After Thirty Years.' You write out that diet and I'll follow it."

"Good."

"Only please don't put down a lot of things that are hard to fix. I'm pretty busy these days, and I get my lunches downtown. That reminds me—if it's not too much trouble, I'd like you to give me food I can eat with the others and not look funny. And a bit of variety if possible."

"My, my!"

"Well, I don't want to eat spinach all the time."

"You needn't worry about eating spinach. All I want to know is a few of the things you like, together with a few of the things you don't like. Then I'll do a week's menus for you and mail them to you. I'll include several recipes, too, for items a bit off the beaten track."

So we talked about his food fancies and the general dietary regimen of his household. Then I made out one day's menu:

BREAKFAST

Orange Juice
Cereal with Milk and Sugar
Hot muffin Butter
Glass of milk

LUNCH

Tomato soup Cheese crackers
Avocado pear salad on lettuce
Hard roll
Half pint bottle of milk or buttermilk
Melon

DINNER

Grapefruit half, filled with grapefruit sections and white grapes, garnished with mint and tiny balls of orange ice
*Red flannel hash with poached egg
Corn on cob Butter
Hard roll
Head lettuce with thousand island dressing
Apple pie

"I suppose I can eat all I want of these items?" he asked, after he had digested the three meals on paper.

"Well, I wouldn't eat any more than one serving of them. Whatever else may be said about the ailment, there is one generally accepted fact, and that is that gout occurs most frequently among the ranks of 'heavy eaters' and those who are overweight. That's why, in this instance, I always work out menus that are not too high in calories. You weigh 185 pounds—that's 84 kilograms. We usually allow a minimum of one gram of protein for each kilogram of body weight for a normal diet, and we consider this to provide 10 per cent of the total calories needed."

He waved one hand around but I kept right on.

"Eighty-four grams of protein, bearing in mind your 84 kilograms of body weight, would provide 336 calories. That adds up to a total requirement of 3,360 calories in the normal diet. But for a person suffering from gout, we cut down on the calories. So the diets I will do for you will be worked out on a basis of 2,800 instead of 3,360 calories. Twenty-eight hundred will be enough for you. It might even streamline your figure a bit—and you wouldn't object to that would you?"

Mr. Bronson squinted one eye down a rather roller-coaster front. "No objections. But what's this Red Flannel hash?"

"Red flannel hash is a good old New England dish. It's beets, carrots, potatoes, and so on, cooked with butter and cream. You'll like it."

"All right. I'll take your word for it. But if it makes me squirm. . . ."

"Now there is plenty of food here, in adequate variety, and containing those much talked of vitamins and minerals. Ask Dr. Jackson if he thinks you had better get additional iron and vitamin B. Above all, forget that you are on a restricted diet. Don't even talk about it. You'll be much happier. Come to see me the next time you see Dr. Jackson. I want to know how you get along. And if you have any questions about this menu or the one's I'll mail you, just telephone."

Here are the other menus, together with a list of special recipes I sent to Mr. Bronson:

BREAKFAST

Melon
Cereal with milk and sugar
Glass of milk
Waffles Maple syrup

DINNER

Chilled pineapple juice
Shad roe with toast points Celery hearts
French fried potatoes
Baked squash Hard roll
Watercress with French dressing
Burnt almond ice cream

SUPPER

*Meatless vegetable soup Crackers
*Ribbon sandwich loaf Celery hearts
Mixed green salad
Glass of milk or buttermilk
Fresh fruit

BEFORE BED

Glass of milk or buttermilk
Fresh fruit

BREAKFAST

Fruit nectar
Cooked cereal with milk and sugar
Tomato sauce omelet
Hot biscuit Honey
Glass of milk

LUNCH

Cream of corn soup Soda crackers
Grilled cheese sandwich
Fresh fruit salad
Half pint bottle of milk or buttermilk
Butter pecan ice cream

DINNER

Fresh melon ball cocktail
Celery hearts
Vegetable plate *Eggs au beurre noir
Lettuce with French dressing
Strawberry shortcake with cream

BEFORE BED

Glass of milk or buttermilk
Fresh fruit

BREAKFAST

Stewed apricots
Cereal with milk and sugar
Herring roe with toast points
Glass of milk

LUNCH

Cream of celery soup Soda crackers
Egg sandwich
Sliced cucumber with cooked dressing
Half pint bottle of milk or buttermilk
Fruit gelatin with fresh fruit garnish

DINNER

Tomato juice with lemon Potato chips
Celery hearts
Welsh rarebit on hot buttered rice
Carrot balls with chopped chives
Fresh fruit salad on lettuce
Pumpkin pie

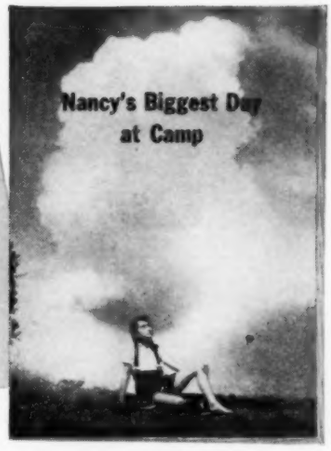
BEFORE BED

Glass of milk or buttermilk
Fresh fruit

(Continued on page 740)

They're new! They're free!

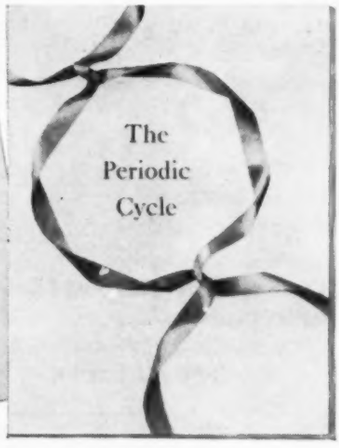
Two modern booklets to help you in your program of menstrual education.



SOME OF THE QUESTIONS ANSWERED:

What is menstruation?
How long does it last?
How active can I be?
Can I bathe?
Can I swim?
How do I know when to expect it?

New! For Younger Girls—"Nancy's Biggest Day at Camp" is a story version of the simple facts of menstruation—told in a way that young girls like to read. It's bright and fun reading—yet scientifically accurate. The locale is a girls' camp. There are many illustrations of camp life. This booklet replaces "What a Trained Nurse Wrote to Her Young Sister", in the Modess Program of Menstrual Education. Order as many of "Nancy's Biggest Day at Camp" as you need so that each girl may have a copy to keep.



SOME OF THE QUESTIONS ANSWERED:

What is menstruation?
What is the periodic cycle?
What do these words mean.. puberty, menopause, etc.?
Are sports taboo during the period?
Can I go dancing?
How can I keep dainty?
Can I wash my hair?

New! For Girls of High School Age—This new and completely revised edition of "The Periodic Cycle" explains menstruation in a more adult and scientifically detailed manner. Yet it is written very simply. Teachers, doctors, nurses, and camp directors praise this new booklet highly. Send to Modess for a big enough supply so that each of your girls may have her own copy.

FREE — Anatomy Charts and Teaching Outline! To complete your program of menstrual education, Modess has also prepared a set of anatomy charts and a teaching outline. Teachers who use "The Periodic Cycle" in their classrooms will find the charts most helpful. The Teaching Outline was prepared and written by a teacher. It explains how to use these teaching aids most effectively.

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For students: Please send me ..... copies of the new edition of "The Periodic Cycle," ..... copies of "Nancy's Biggest Day at Camp."
For teachers: ( ) Please send me also the set of Menstrual Anatomy Charts. (Distribution of the charts is limited to teachers who use "The Periodic Cycle" in their classes.)

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WHAT'S THE MOST DANGEROUS DISEASE OF School Years?

RHEUMATIC FEVER causes more serious disability among children of school age than *any other single disease!*

In addition, it is responsible for most of the heart disease among people under the age of 40—much of this heart disease results from rheumatic fever attacks which started during school years.

►Rheumatic fever usually appears after a chill or exposure to inclement weather. It is often accompanied or associated with a sore throat, tonsillitis, or a cold. Symptoms of an attack, often so vague or slight as to be frequently overlooked, may be: rapid heart, fever which may be slight, pallor, loss of appetite, weight, and vigor, fleeting muscular aches. However, symptoms may be much more pronounced, such as: repeated nose bleeds, extreme nervousness, stiffness, swelling in joints and muscle, pain often traveling from joint to joint.

It is vitally important for parents to realize that a child with any of these symptoms may have rheumatic fever and needs immediate medical attention.

If your doctor determines that rheumatic fever *is* the trouble, he will probably point out to you the following important facts:

►Rheumatic fever is a serious, potentially chronic disease. Repeated attacks are common. The heart is almost invariably involved. The seriousness of heart damage depends largely on the severity and frequency of attacks. Consequently, continuous medical supervision during the illness and convalescence and periodic examinations afterwards are necessary.

Rheumatic fever may last many months; the patient must often stay in bed long after all fever and pain have disappeared—until the doctor gives permission to get up. Since rheumatic fever is apt to run in families, the doctor should be given an opportunity to examine other children in the family at regular intervals.

►While the cause of the disease is unknown, and its cure as yet unfound, early detection of its onset and of recurrences, and prompt medical care, can often do much to lessen its severity and help children to live useful, happy lives. Many thousands of people who suffered attacks in childhood are today active and healthy.

To help parents further guard against the dangerous effects of rheumatic fever and its recurrences, Metropolitan offers two free booklets, "Protecting Your Heart," and "Rheumatism."

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Please send me a copy of your booklet, 91-Z, "Protecting Your Heart," ☐ or 91-ZA, "Rheumatism." ☐

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The Charles Boettcher School

(Continued from page 722)

approximately forty-four crippled pupils, new enrollees have constantly been registering until now there are sixty-nine children attending. These youngsters are not only taught their lessons by teachers who are patient, gentle and kind to them, but they are given the finest scientific medical care by a school physician who visits the school each day before classes. With such splendid things being done for them, these crippled children are developing initiative, self confidence and responsibility that will help them to grow into self-respecting and self-supporting citizens.

Two years ago in September 1938, a bond issue was defeated, which would have provided a school for the crippled children of Denver. A year later the dire need of a school for handicapped children was brought to the attention of Claude Boettcher, a prominent Denver man. After careful study, he was convinced that such a progressive school for crippled children was really needed. "Suppose," he reasoned, "Mrs. Boettcher and I and The Boettcher Foundation give $193,500 to be used to help build a school for crippled children, as a tribute to my 88 year old father, Charles Boettcher, and have the building constructed and dedicated while he is still alive."

The Public Works Administration contributed another $204,750, and so, in September 1940, the beautiful $398,250 Charles Boettcher School opened its glass doors to the crippled children of Denver. Too, on that day, the School District Building was deeded outright to the Denver public schools; thus it became an integral part of the Denver school system.

This school—wonderful not only in its specially designed equipment for crippled children, but in the fine educational work that is being done for these handicapped youngsters—is truly a great tribute to one of Colorado's pioneers.

By **RUTH COWAN CLOUSE**

Essentials of an Adequate Diet: II

Thiamine—vitamin B_1—is now thought to be one of the most essential substances in an adequate diet

OF ALL THE SUBSTANCES now known to be essential for human nutrition thiamine, or vitamin B_1, perhaps is deserving of first attention in a discussion of the essentials of an adequate diet. Popular interest in this vitamin has been stimulated by the program for the restoration of the nutritional values of bread and other cereal products proposed by the Council on Foods and Nutrition of the American Medical Association more than two years ago and now actively sponsored by the Committee on Food and Nutrition of the National Research Council. This program, so important for good nutrition in the present national emergency, is a direct result of the recent scientific discovery that the customary diet of many Americans, while satisfactory for the prevention of beriberi—one of the most extreme forms of thiamine deficiency—still does not supply enough thiamine for best nutrition.

Estimates of the thiamine content of the diets of men and women suffering from beriberi, and comparison of these diets with those prevailing in localities where beriberi does not occur, has led to the observation that from 250 to 300 International units, or from about 0.75 to 1 milligram of thiamine daily, is adequate to prevent this disease. However, further observation of persons who have voluntarily restricted their thiamine intakes for experimental purposes also has shown that amounts of thiamine adequate to prevent beriberi are not sufficient to support the best possible mental and physical health. For the latter purpose at least twice the amount of thiamine needed to prevent beriberi is required.

Other studies have shown that thiamine is intimately concerned with carbohydrate metabolism and that it is essential for the conversion of the chemical energy of sugars and starches into the mechanical energy needed for muscular work. Thus thiamine requirements are found to be directly related to activity and also to size. The larger and more active the person the higher the thiamine requirement.

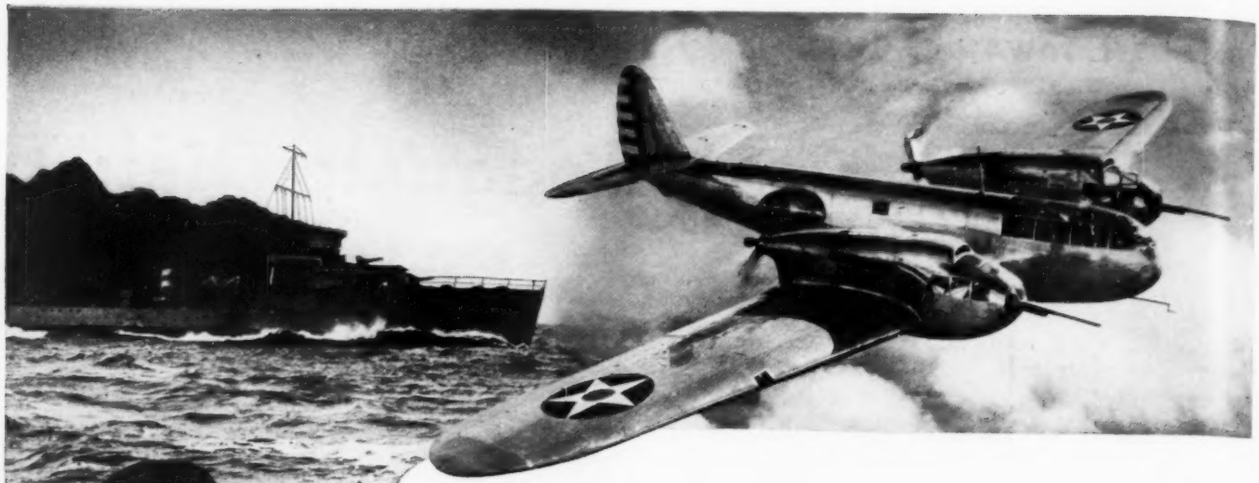
In the formulation of its recommended daily allowances for thiamine the Committee on Food and Nutrition of the National Research Council has considered each of these factors. The recommended allowances, which are reproduced in table 1, include separate values for men and women at three different levels of activity. For a man engaged in a sedentary occupation such as office work or classroom teaching, 1.5 mg. of thiamine daily is recommended. For an active man engaged in hard physical work at least 2.3 mg. daily is allowed. Women, who are usually smaller and less active than men usually need somewhat less thiamine. Larger or more active women, however, will require proportionately larger amounts. Adolescent boys and girls, because of their size and activity, require at least as much thiamine as the sedentary adult. The allowances for younger children are proportional to the size and activity of the child.

Table 1. Standard Allowances for Thiamine as recommended by the Committee on Food and Nutrition of the National Research Council.

	Mg.
Man (154 pounds)	
Moderately active	1.8
Very active	2.3
Sedentary	1.5
Woman (123.2 pounds)	
Moderately active	1.5
Very active	1.8
Sedentary	1.2
Pregnancy (latter half)	1.8
Lactation	2.3
Children up to 12 years	
Under 1 year	0.4
1- 3 years	0.6
4- 6 years	0.8
7- 9 years	1.0
10-12 years	1.2
Children over 12 years	
Girls—13-15 years	1.4
16-20 years	1.2
Boys—13-15 years	1.6
16-20 years	2.0

The allowances recommended by the Committee also take account of the fact that the thiamine requirements of the pregnant woman are considerably higher than those of the nonpregnant adult and that the requirement during lactation is the highest of any period in a woman's lifetime. This high requirement during lactation is due to the fact that the mother's intake must supply enough thiamine to satisfy her own bodily requirements as well as the nutritional requirements of the baby through the milk. Experiments with animals have disclosed the fact that the mother's requirements must first be met before adequate amounts of thiamine can be secreted in the milk and that unless the mother receives a generous allowance of thiamine the milk will be scanty and of inadequate thiamine content. An allowance of at least 2.3 mg. of thiamine daily during lactation therefore has been recommended by the Committee.

As a guide in planning diets which meet the standard allowances for thiamine the thiamine content of a selected list of common foods is provided in table 2. These values are given in terms of the quantities of each food which can



Adequate nutrition is as important for the nation's protection as its armed forces. In fact, it is the nation's "first line of defense."

Meat . . .

and Its Place Among the "Protective Foods"

WHEN the term "protective foods" was first coined it was applied almost exclusively to citrus fruits, green leafy vegetables, and dairy products, which were then known to be rich in vitamins or minerals or both. Since that time, the rapid sequence of discoveries of heretofore unknown vitamins and the quantitative analyses of innumerable foods for vitamins and minerals have enlarged our knowledge. Many foods, unconsidered in the early days of vitamin studies, have since been shown to be remarkably rich in vitamins and minerals, and therefore in reality rank high among "protective foods." Meat, particularly, deserves this distinction.

Meat and meat products are important natural sources of the nutritionally essential B vitamins—thiamine (vitamin B_1), riboflavin (vitamin G or B_2), and nicotinic acid (a vitamin important in the prevention of pellagra). Because of its great palatability, meat is a food which is universally liked and which can be eaten in ample amounts, daily, to supply a goodly portion of these vitamins needed every day.

In addition, meat is one of the richest sources of protein, the chief constituent of all body cells and fluids. Meat proteins are unusually high in quality, are readily converted to the body's needs, and are promptly utilized by it. Without adequate amounts of high quality proteins the human body is unable to grow or maintain the process of living. Meat also provides important amounts of the essential minerals—iron, copper, and phosphorus.

ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

The Seal of Acceptance denotes that the statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

American Meat Institute

CHICAGO

easily be eaten daily. Considerably larger quantities of many of these foods can be taken daily, especially by active persons with high caloric requirements.

Table 2. Thiamine Content of Average Daily Portions of Some Common Foods.

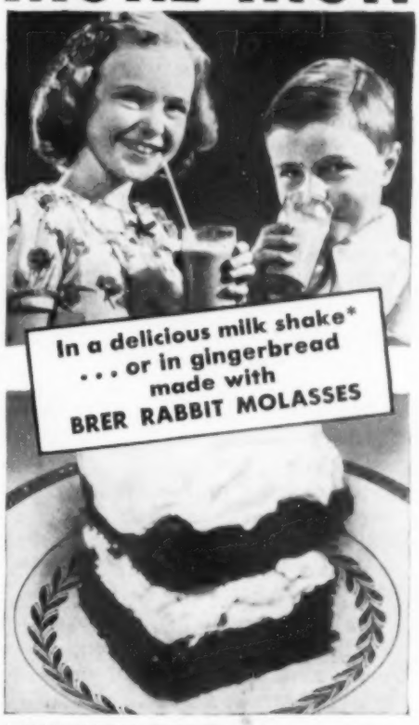
Food	Quantity	Thiamine mg.
Milk	1 pint	.23
Egg	1 average	.07
Pork	4 ounces	1.60
Liver	4 ounces	.39
Beef, average fat content	4 ounces	.23
Spinach	100 grams	.11
Turnip greens	100 grams	.14
Cabbage	100 grams	.10
Carrots	100 grams	.07
Tomato	100 grams	.08
Navy beans, baked	100 grams	.13
Soybeans, green	100 grams	.47
Soybeans, dried	100 grams	1.46
Potato	100 grams	.13
Orange juice	100 grams	.11
Prunes, dried	5 medium	.09
Apple	1 large	.08
Oatmeal, cooked	100 grams	.10
Peanut butter	3 level tablespoons	.28
Whole wheat bread	6 slices	.41
Enriched bread	6 slices	.38
White bread	6 slices	.12
Wheat germ	1 ounce	.85
Dried brewer's yeast	1 ounce	2.00

It can be readily estimated from the data given in the table that a diet consisting of one pint of milk, one egg, six slices of whole wheat bread, four ounces, or one fourth pound of beef, one apple and 100 grams or approximately one half cup of cabbage, carrots, orange juice, potato and oatmeal will provide at least 1.53 mg. of thiamine. Such a diet conforms to the dietary pattern recommended in the first article of this series and more than meets the recommended allowance for an average man of sedentary occupation. A larger and more active man naturally will eat larger servings, particularly of bread and potatoes, and possibly of meat and other foods, thus obtaining larger amounts of thiamine. Additional amounts also can be obtained by the frequent and liberal use of such rich sources of thiamine as pork, liver, soy beans, peanut butter, wheat germ and dried brewer's yeast. Wheat germ and yeast are convenient rich sources of thiamine in special diets in which an unusually large thiamine intake is required, or when some of the more common foods, customarily included in the diet, cannot be eaten. Other more concentrated sources of thiamine should be used only under the direction of a competent physician.

If white bread is substituted for whole wheat bread in the diet described in the foregoing paragraph the thiamine content will be reduced from 1.53 mg. to 1.26 mg. The use of a refined wheat cereal instead of oatmeal would decrease the thiamine content still further, and would bring the intake of this vitamin perilously near the minimum amount required for the prevention of beriberi. If whole wheat cereals are not used, the needed amounts of thiamine can be obtained from enriched white bread and other enriched cereal products. Although larger amounts of thiamine also can be secured by the more frequent use of such foods as pork, liver and navy beans, the surest means of obtaining a uniformly adequate daily supply of thiamine is the use of either whole grain or enriched cereal products to the extent of at least half of the cereal intake.

The values given in the table represent in most instances the thiamine content of raw foods. Thiamine is readily soluble in water and fairly large quantities may be lost in cooking. Losses due to the solution of thiamine in the cooking water may be prevented either by cooking the vegetable in small amounts of water or by saving the cooking water and utilizing it in the preparation of soups and sauces. The former method is not satisfactory for green vegetables or the so-called "strong-juice" vegetables such as onions, cauliflower, broccoli and cabbage. To secure the most attractive and palatable product, these vegetables must be cooked in fairly large quantities of rapidly boiling water in an uncovered kettle. All vegetables should be cooked only long enough to make them tender, and should not be permitted to stand before serving. Soda, sometimes used to preserve the green color of vegetables, is particularly destructive of thiamine and should never be used in vegetable cookery for this purpose.

2 ways to give your child MORE IRON



IT'S GOOD NEWS—this easy way to give children extra iron! Not in medicines, mind you . . . but in a food children consider a real treat.

Recent scientific tests have proved that New Orleans molasses is second only to beef liver as a rich food source of iron. (All the tests were made with Brer Rabbit New Orleans Molasses.) 3 tablespoons of Brer Rabbit Molasses will supply about one-third of your child's total daily iron requirements.

Molasses Milk Shake—Mix one or more tablespoons of Brer Rabbit Molasses with a glass of milk.

Brer Rabbit New Orleans Molasses comes in two flavors—Green Label, a dark, full-flavored molasses; Gold Label, a light, mild-flavored molasses.

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Please send me Brer Rabbit's new book of over 100 ways to use molasses—in gingerbreads, cookies, cakes, breads, main dishes, desserts, puddings, ice creams, candies. Colorful, washable cover! Illustrated!

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From Witch Doctor to Modern Dentist: II

(*Continued from page 707*)

During the Sixteenth Century two great forward steps were taken in science, and these had a marked effect on subsequent knowledge and practice in dental surgery. Paracelsus, a strange man who mixed real knowledge and scientific skill with alchemy and astrology, brought to medicine the concept of chemical therapeutics and dared to challenge the authority of Galen; and the Janssens, Hans and Zacherias, in 1590 constructed a crude microscope. Meanwhile, in both France and England, the status of surgeons was improving. In the latter country, Henry the Eighth granted a royal charter to the Guild of the Barber Surgeons, a powerful organization that had existed since 1308 and continued to function until 1745.

In the time of Shakespeare and on through that of Milton, there were several classes of men to whom the sufferer from dental ills might apply for relief. Physicians and surgeons doubtless took care of the upper and middle classes, but the poor can hardly have had any dental attention beyond that given by itinerant quacks or village barbers and blacksmiths. However, science was making rapid strides. The study of the human body by dissection was no longer considered a sin, with the result that its structures and functions were becoming better understood every year.

A man who made possible some of the most notable advances in anatomy and histology was the Hollander, van Leeuwenhoek (1632-1723), probably the first man to see germs. In order to see them he had first to improve the microscope. Under the lens of the instrument that he built he examined some of the tartar scraped from his own teeth, reporting in 1683 to the Royal Society of London his discovery of "animalcules" in this material. Previous to this he had told the society of his findings regarding the microscopic structure of dentine. His introduction of the microscopic study of tissues, complemented by that of Malpighi, was perhaps the most notable achievement of the century as far as the progress of dentistry was concerned. Yet while efforts were continually being made to render treatments of dental disease more efficient and less painful, no great progress can be noted, although the filling of carious cavities was coming into favor as a substitute for the wholesale extractions of earlier times.

Dentistry Becomes a Profession

The man generally credited with the foundation of dentistry as an independent profession is Pierre Fauchard (1690-1761), a contemporary of Voltaire and of Frederick the Great. In Fauchard's youth, and perhaps earlier, aspirants to the practice of dentistry in France had to take an examination. What sort of examination it was, or whether those who passed it confined their operations entirely to the mouth and teeth, is not known, but these men could not have been mere ignorant tooth-drawers. As in a great many other trades, dentistry was almost always learned by a young apprentice from an older master. The knowledge of the master was passed on to the apprentice by precept and example.

There were few, if any, dependable books which the student or practitioner could find information that might help him. Fauchard undertook to write "Le Chirurgien Dentiste," published in 1728. This book, while it contained little that was new, was a valuable text, since it brought together for the first time all the most authentic knowledge on the subject. At about the same time Philip Pfaff in Germany and the great John Hunter in England also produced important books on dentistry.

From Fauchard's book much interesting knowledge may be gleaned of the state of dentistry in the expansive and prosperous Eighteenth Century. For one thing, there were as yet no real toothbrushes. There is an unverifiable story that the toothbrush as we know it was invented somewhat later than this by a young English liberal while he was imprisoned for taking part in a political riot. But Fauchard recommended cleaning the teeth with a fine sponge or "the end of a root of marshmallow," together with some paste, powder, or mouthwash for which he gave the formulas. The fetish of the clean tooth was already well on the way to becoming established. Fauchard says, "Little or no care as to the cleanliness of the teeth is ordinarily the cause of all the maladies that destroy them." Later research has shown that he was wrong, but it is interesting to note that the idea that a clean tooth never decays originated long before our own time.

In Fauchard's ironic passage concerning his doubt of the existence of worms in the teeth he says, "I have done everything possible to convince myself with my own eyes of the existence of these worms. I have made use of excellent microscopes . . . and have made a great number of experiments with them both on caries in teeth newly extracted as well as on tartar of different consistency accumulated on the same, but have never succeeded in discovering any worms." The whole passage, which may be read in translation in Guerini's "History of Dentistry," indicates that Fauchard was politely but firmly putting an end to the worm theory of dental caries. His own ideas on the pathology of caries were somewhat vague and largely erroneous, but, as Guerini remarks, "we owe him a great deal for having once for all put an end to the ridiculous theory of dental worms."

The first systematic account of pyorrhea is given by Fauchard, and he also seems to have been among the first to use orthodontic procedure in the treatment of malocclusion of the teeth. He made several improvements in dental prosthetic or restorative work. The main contribution of Pfaff, dentist to Frederick the Great, was the use of plaster models in prosthetic

work. Pfaff was also the first dentist to cap an exposed dental pulp before filling the tooth. Earlier dentists, including Fauchard, had merely placed a filling over the exposed pulp or had sometimes cauterized it.

In England, during the Eighteenth Century, the most notable contributions to our knowledge of the anatomy and physiology of the teeth were made by a man who was not a dentist—John Hunter, surgeon-general to the English army. Since, after Fauchard's demonstration, no intelligent person could believe in the existence of worms in the teeth, many students were now looking for the true cause of that ubiquitous ailment, caries. Hunter anticipated the conclusions of our own time in his statement that caries is a disease of altogether obscure origin, not due to external irritation or to chemical processes, and peculiar to the teeth alone. Pyorrhea alveolaris he also regarded as an etiologically obscure disease for which no adequate prevention or cure was available.

It was during the Eighteenth Century that a few dentists from France and England began to carry their knowledge and skill to those struggling little settlements along the western Atlantic seaboard that were to become the United States of America. Paul Revere manufactured artificial teeth, and George Washington employed the services of a dentist. A set of teeth that Washington used for many years may still be seen at the Baltimore College of Dental Surgery. This institution, founded in 1840, was the first dental college in the world. It was brought into being largely through the efforts of Horace Hayden and Chapin A. Harris, who founded it after they had attempted in vain to persuade the University of Maryland to include a course in dentistry in its curriculum. Thus, as late as 1840, dentistry was still, as Alfred Owre later aptly named it, the stepchild of medicine, and a stepchild it has remained. Since the founding of the Baltimore school, however, the United States has taken the lead in dentistry, which from that time to this has developed rapidly in all its branches, influencing progress in other civilized countries throughout the world.

Next month Dr. Brekhus will discuss biologic factors in the loss of teeth.

Here's Thiamin From Hawaii

A regular six ounce tumblerful of Dole Pineapple Juice contains Hawaiian flavor and refreshment that helps start each day with a song. But in addition to that taste satisfaction, a six ounce glass contains important nutritive elements, too.

There's Vitamin B_1 (Thiamin) and Vitamin C (Ascorbic Acid); according to authoritative research, enough of each in a six ounce glass to supply one-sixth of the average daily recommendation of the Committee on Foods and Nutrition of the National Research Council. Dole Pineapple Juice also contains Vitamin A, Iron, Calcium, Phosphorus, and quickly available food energy. There are 16.9 calories to the ounce.

You will appreciate the convenience of serving this true undiluted juice of sun-ripened Hawaiian pineapples. Just take a chilled can from your refrigerator . . . punch . . . pour . . . and serve.

DOLE Pineapple Juice

FROM HAWAII, U. S. A.

ACCEPTED AMERICAN MEDICAL ASSN Committee on Foods

PROPER COOKING
the ADE-O-MATIC way
means more
NUTRITIOUS
FOOD

Science has discovered that all "good cooks" do not, necessarily, cook food healthfully, because ordinary methods simply fail, when it comes to the important matter of conserving fully, vitamins and soluble minerals. Now it is possible to cook thoroughly without boiling away or losing so much of these healthful elements.

Everyone knows that heat travels from its source in three ways: by Conduction, Radiation and by Convection as shown in the following diagrams.

COOKING BY CONDUCTION

This is the ordinary way, with the flame contacting the pan giving intense heat in one spot, which often destroys part of the food before cooking *all of it*.

GRATE FLAME BURNER

COOKING BY RADIATION

Used alone this method would be more satisfactory but it is impracticable and inefficient.

A piece of paper laid on top of the Ade-O-Matic Surface Oven with burner turned on will not burn.

ADE-O-MATIC SURFACE OVEN

COOKING BY CONVECTION

This is the scientific, Ade-O-Matic way which converts conducted and radiated heat into convected heat, a method that, like baking, cooks food thoroughly (clear through), without scorching or burning; makes it more delicious, more acceptable to the digestive system (even fried foods).

THE ADE-O-MATIC SURFACE OVEN IS THE SIMPLE, ECONOMICAL WAY OF CONVECTION COOKING ON TOP OF THE STOVE

Try this new scientific method of cooking tomorrow. You can buy these colorful, heat-proof enameled units, bearing the Good Housekeeping seal of approval at your department store, hardware or chain store for 59c each. Ade-O-Matic prevents scorching and burning even when pan is "boiled-dry;" serves as double-boiler. Permits "waterless cooking" the safe, convenient, low-cost way. Order direct if you wish for 10c extra to cover mailing.

ADE-O-MATIC CO.
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"Cracking Up" under the strain

(*Continued from page 686*)

may have contributed to his decease from hypertension at an age several years short of his normal expectancy.

There can be little denial of the assertion that the life of a business executive is strenuous. The lives of many business men are well portrayed by a man running or walking up an ascending escalator. The impression that this manner of living of business executives impairs their health seems reliable. Some one is almost certain to say, "Certainly executives don't live as long or as healthily, but this is not because of the work they do; rather, it is because the same inherited chromosomal urge that drives them to positions of power also drives them to ill health and destruction." There is much in that attitude which can be defended with logic, and there is some truth in it. However, it is inadvisable to fold hands quietly and wait for fate to deal with this problem, when there is much to indicate that even inherited chromosomal urges may be modified and that the course which they take may be directed.

In Marjorie Kinnan Rawlings' beautiful book of a backwoods family entitled "The Yearling," Penny, the kind and understanding father, approaching death, speaks to his son: "You've seed how things goes in the world o' men. You've knowed men to be low-down and mean. You've seed old Death at his tricks. You've messed around with old starvation. Every man wants life to be a fine thing and easy. 'Tis fine, boy, powerful fine, but t'ain't easy. Life knocks a man down and he gits up and it knocks him down again. I've been uneasy all my life. . . . I want life to be easy for you, easier than 'twas for me. A man's heart aches seeing his young uns face the world, knowing they have got to git their guts tore out as his was tore. I wanted to spare you long as I could. I knowed the lonesomeness the yearling eased for you but ever' man's lonesome. What's he to do then? What's he to do when he gets knocked down? Why, take it for his share and go on." As Penny says, man must go on, but he need not go so arduously, so intently.

The Failure to Define Objectives

Certainly, the business executive fails to take the long view of life. It is strange that the average business executive plans his life, aside from his annuities and insurance, as if he were to live forever. Always he plans for tomorrow, forgetting that soon tomorrow is today and too soon, today is yesterday. So often the executive works hard to accumulate funds with which to play tomorrow, yet when tomorrow comes he cannot play, for either he is not here or life has lost its savor.

Man's adulation of man has elevated him in the eyes of his fellowmen until his importance in the universe has assumed distorted and untruthful proportions. If one compresses the time scale a millionfold, it is seen that the first men learned to use certain odd-shaped sticks and stones as tools and weapons a year ago. Yesterday the alphabet was introduced and the Greeks were developing their brilliant art and science. Twenty minutes ago the roentgen rays were discovered, and fifteen minutes ago the automobile came into general use. Thus, a lifetime is infinitesimally small in terms of world existence, and could man see how small, how insignificant, how unimportant his individual life is, he might shape it so that he would achieve more of happiness and content and less of material success and perhaps ill health.

There is a growing belief that material rewards are not adequate returns for labor. Man cannot live by bread alone. Lin Yutang, in his excellent book, "The Importance of Living," which every business executive should read, has pointed out that the accumulation of money and the things that money will buy frequently leads to emotional complications, domestic dissension, dissipation, neurasthenia and hypertension. He believes that the condi-

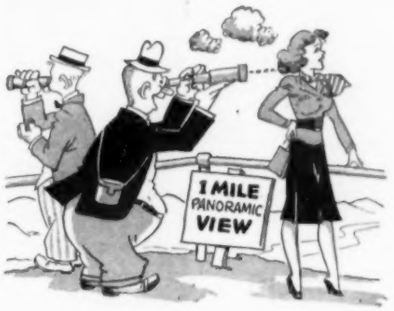
tion of the world is far too serious and in need of a wise and merry philosophy and that the function of philosophy is to teach man to take life more lightly and gaily than the average business executive does, for in his estimation no man who does not retire at the age of fifty, if he can, is a philosopher.

Ambition

Certainly the average business executive is too ambitious for the good of his own health. I am not interested here with the idea that a life full and brief is more desirable than one which is tranquil and prolonged. I am not interested here with the observation that the gains in civilization might perhaps be greater if all men accepted and practiced the ways of the strenuous life. I am interested here only with observations concerning the health of the business executive. It is for the individual person and for the philosopher to decide, if they can, whether it is more desirable to accomplish much and die soon or to accomplish as much less quickly and to live longer. They must decide too whether the pleasures of relaxation are less desirable than the thrills of maintained striving.

The situation in the matter of ambition seems to begin in early childhood. Not many years ago this was characterized by the statement of the child's teacher, "You be a good boy, work hard and some day you will be president, Johnny." Today fewer parents want their sons to be president, but counterparts of the presidency are commonly used as examples of the reward for ambition and hard work. Is it true that if Johnny would be a good boy and work hard he could be president? Of course it isn't, and that is one of the reasons that ambition so frequently is an occupational hazard to the business executive. In these modern times, when the results of living are more to be desired than the method of living, ambition for success drives those who have not capabilities to succeed into unhappiness, dissatisfaction and ill health. I do not deny the desirability of ambition. I do deny that ambition for material rewards as a way of living is a beneficial way of living. It seems time that we question whether or not the results of ambition (that is, the possession of

FAMOUS WORDS OF ADVICE—



1. "A miss is as good as a mile."

2. "There's no place like home."

3. "Even the best of friends must part."

4. "DRINK POSTUM, INSTEAD!"

ARE YOU ONE OF THOSE FOLKS who think life wouldn't be worth living if the doctor said, "No more coffee"?

Well, for goodness sake, *why?* For still you could enjoy the delicious, heart-warming drink that many confirmed coffee drinkers find they *prefer* to coffee. Chances are, your doctor himself would advise, "Drink *Postum,* instead."

Postum, of course, contains no caffein or any other stimulant. It's made of nature's choice whole wheat and wheat bran, fresh-roasted, and slightly sweetened—nothing else. It's satisfying—yet *safe.*

But why wait for a nod from the doctor? Treat yourself to a cup of this cheering drink with your very next meal! On warm days, a frosty glass of *iced* Postum is especially delicious.

Economical—easy to prepare!

Postum costs less than ½¢ a cup. It comes in two easy-to-prepare forms: *Postum Cereal,* brewed like coffee; and *Instant Postum,* made instantly in the cup. A product of General Foods.

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Council on Foods

ASK YOUR DOCTOR ABOUT POSTUM

money, fame and success) are always, usually or commonly worth while. Haven't the objectives of life become a bit distorted? Shouldn't we question whether material success brings happiness and contentment, and whether it does not, rather, bring more responsibilities, more care and more dissatisfaction? Shouldn't man seek more happiness and less material success if he wishes good health? As Lin Yutang has pointed out, many wise men know that the desires for success and wealth are euphemistic names for the fears of failure, poverty and obscurity, and that these fears dominate our lives. These are not natural fears, but are fears instilled into man by what he persists in calling "civilization." The ambitious, the able, the clever, those inspired with desires to serve mankind, those who have a career to carve, and those who desire to make an impression on the world, all of them frequently find, too late, that instead of a full life, they have emptiness.

One may question, "Where would the world be if it were not for ambitious men?" The pessimist may answer, "Perhaps further advanced than it is now." But what then of automobiles and trains and airplanes and factories and electricity? The pessimist asks, "Have they contributed to man's happiness or health, or have they accelerated the incredible speed with which life becomes more complex, with duties, responsibilities, fears, inhibitions and ambitions? For these are born not of nature but of human society." Perhaps no man can answer reliably, but at least these are not undiluted bounties and may perhaps be detriments to human life, well disguised.

One may ask why the products of our magnificant industries which save work and make life easier bring so little happiness. The simple answer is that man has not controlled the offspring of his labors. In war they serve that he may poison and mutilate his fellow man, and in peace they make his life hurried and uncertain. Instead of freeing him from spiritually exhausting labor, they have made men the slaves of machinery; they complete their monotonous duties and long day's work with disgust.

Much can be learned about the factors responsible for long life, if one studies long-lived people. Pearl, in a study of 3,000 persons aged 90 to 100 years, wrote the following: "The literature of longevity is full of advice, recipes and precepts for the attainment of long life. These precepts touch on nearly every conceivable aspect of personal physiology and hygiene. Yet it is an odd fact that careful study of our collection of life records of known centenarians and nonagenarians leads, as one of the broadest generalizations it is possible to make from them, to the conclusion that these two thousand and more persons exhibited substantially the same rank and degree of variation relative to these various items of personal hygiene as is found among them in general. Some were light eaters, others on the gluttonous side. Some used tobacco; others did not. Some had been in robust health all their lives; others had been failing a great part of the time, and so on. In only one outstanding respect, besides great longevity, did the group markedly differ from the generality of mankind on the whole. That is the fact that a vast majority of these extremely longevous folk were of a placid temperament, not given to worry. In this regard, this human material agrees with and confirms a generalization that has emerged from experimental studies on life duration. It is that the length of life is generally in inverse proportion to the rate of living. The more rapid the pace of living is, the shorter the time that life endures. This relationship has been shown to exist for a variety of forms, including plants, various lower animals, insects and so forth. It is a relation that is obviously in some degree within the power of individual control."

Suggested Remedies

Presuming that a strenuous life, diets which predispose to obesity, and the smoking of tobacco are occupational hazards of the business executive, what can be done about the situation? Cessation of smoking and avoidance of obesity are easily understood and easily carried out, but from a factual standpoint the business executive frequently pays little attention to advice concerning these matters. Perhaps the reason for this is that the physician places little emphasis on these considerations, for he himself ordinarily smokes too much and has as much need of reducing his weight as his patient has. The situation is even worse when the change in attitude toward the strenuous life and the ambitions which infiltrate so deeply our present-day civilization are considered. The badge of material success has become too much a badge of honor to be easily discarded. Many would rather run their race in forty to fifty years and die in the winning of material rewards than to run it in sixty to seventy years with the attainment of less success. For these reasons one may express pessimism concerning any substantial change in the occupational hazards of the business executive.

Although these characteristics of a modern life will not in all probability be dispensed with, they can be modified in some degree. Law and industry seem to have cared adequately for the laborer by protecting him from industrial hazards and by giving him a working day of eight hours and a working week of five days. What is needed now is a five-day week and an eight-hour day for executives. There should be more division of responsibility, less striving for company and for individual success, more spiritual stimulation and less stimulation by material existence. The decrease of religious influences should be corrected, for they bring spiritual contentment and peace to many. More vacations are needed. These should be restful periods with a minimum of mental activity and with graduated physical exercises. If one could calculate the efficiency of an executive in terms of total contributions to an industry, one probably would find that, within uncertain limits, his contributions increased in proportion to his vacations. In many instances, several short vacations are more beneficial than a single long one each year. Some men find that a vacation of three days each month is more restful than one of three or four weeks each year.

Each enlightened industry of the future may build a house on a hill, overlooking a peaceful valley and a wandering stream. There, periodically, will go each executive, to rest much, to converse little and to eat simply. Such deviation from the path that most executives follow

can result only in clearer minds, more restful sleep, brighter eyes and recovery, in a degree at least, from all the annoying disharmonies of bodily function which impair health. The world doubtless would be better off if man had the habit of lying in bed one morning each week. Physically, it would mean a retreat to one's self; being away from the outside world. This is conducive to rest and to peace and to contemplation. Perspectives become clearer, values are rearranged, dispositions are improved.

Hobbies are important, too. It makes little difference what the hobby is—wood-carving, dahlia-growing, book-collecting, sailing, farming or any other avocation. More physical work is needed for those who work chiefly with their minds and too little with their hands. Almost certainly, hearts and brains and muscles and stomachs would benefit by resumption of the habit of more walking and less riding in motor cars. Golf helps but mostly it is played too strenuously in the effort to win or to lower one's score. The golfer who cares little for scores but who plays for recreation benefits most from this sport. More fishing and hunting are needed; not to catch fish or to kill game, but to furnish diversion. Long hours of sitting in a boat in the sunshine, while casting for bass or muskellunge or pike, or of leisurely fly-casting for trout in a shaded stream, bring peace and contentment and relaxation to many. In short, what is needed today is calmness, steadiness, equanimity and relaxation.

More than five hundred years ago these words were written "Use three physicians still; first Doctor Quiet, next Doctor Merry-man, and then Doctor Dyet." The admonition has hardly been heeded.

There is little prospect that these qualities will become desirable in our national life, but until they do men will continue to be nervous and irritable, to "break down," or to "crack up," to be disgruntled, dissatisfied and discouraged, to stumble and fall with apoplexy, to fail to awaken from sleep, to drop dead or to become disabled by congestive heart failure all too prematurely. Unless the present situation is changed, one must conclude that man has not conquered life, but that life has conquered man.

Keep him on the safe Carnation road

It's a road smoothly paved with purity, digestibility, and all-round nourishing goodness. What better "milk route" *could* a young man take when he graduates from his feeding formula?

You know what a shining reputation Irradiated Carnation Milk enjoys with physicians as a food for infants. Well, the same qualities that make it so successful from birth to weaning are just as valuable later on.

If you want your children to have strong, straight bones and fine, sound teeth, count on Carnation, all through their growing years, to supply *generously* the "builder" minerals, calcium and phosphorus, and the "sunshine" vitamin D that *makes* them build. And protein, for sturdy muscular development.

There's no end to the ways you can use Carnation to tempt youthful appetites to consume more milk. *Drinking* is one way, taking half Carnation and half water to get the consistency and food value of whole milk. Or Carnation undiluted, with fruits and cereals. Or cooked into favorite dishes . . . often full strength, twice as rich as ordinary milk. That *doubles* the milk nutrients in every serving!

Write for your free copy of the 44-page color-illustrated booklet, "Your Contented Baby." It contains some splendid recipes for toddlers. . . . *Carnation Company, Dept. 701-O, Gas Light Bldg., Milwaukee, Wis.*

IRRADIATED

Carnation Milk

"FROM CONTENTED COWS"

Food Fads, Fallacies and Facts: II

By DORIS W. McCRAY

"Any man or woman who sells bad eggs shall be exposed on the pillory. . . ."

STRANGE IDEAS about food continue to prevail. A man may feel that his wife is spending too little time in the kitchen and call her a "can-opener cook." Actually she may be more careful of the family welfare and better informed than he believes her to be. The degree of accuracy and inaccuracy of statements about food is vitally important.

Canned Foods

Conditions in canneries have changed considerably since the birth of the canning industry in the time of Napoleon. The French government offered a prize of twelve thousand francs for a new method of food preservation. It was won by Nicholas Appert in 1810. His method consisted of heating food, then sealing the container without air. The reason why heating the food and excluding air would preserve the food was not discovered until Louis Pasteur, another Frenchman, laid the foundation of the science of bacteriology.

Commercial canning is economical of vitamins, because the air is exhausted from the cans before they are sealed, and there is considerably less oxidation of vitamin C. In order that the foods will keep without spoilage and loss to the producer it is necessary to use clean foods and to heat them at the proper temperature for a sufficiently long period of time. Preservatives are not necessary. Under present food laws they are allowable only in small amounts in only a few foods and they must be declared on the label.

While some criticism of canned food was justified under early conditions, at the present time commercially canned food is clean, safe, wholesome, and particularly high in vitamin content. The vitamin content of canned food is comparable to that of foods properly cooked in the home.

There is a common belief that the can should be emptied the moment it is opened in order to avoid the development of poison. This belief is erroneous because the tin does not corrode even when it contains tomatoes or other highly acid foods. It is just as clean and actually more sanitary than a utensil from the kitchen cupboard. The modern grocery store has dry storage rooms for canned goods to prevent the outside from rusting. If a can is opened and allowed to stand poison does not develop.

There is a common misunderstanding about how evaporated milk should be handled in the home. While it is perfectly all right to punch two holes in the top and pour the milk from the can, it should be stored in the refrigerator and used within a couple of days. Some people keep it in the cupboard, where it was safe before it was opened. Small families should purchase several small cans, and use one at a time. Refrigeration is required after the can is opened, the same as for fresh milk.

There has been much progress in canning methods, and in food legislation. Formerly the belief that catsup was made from spoiled tomatoes was sometimes founded on fact. In a book published in

1863. "What to Eat and How to Cook It" by Pierre Blot, late editor of Almanack Gastronomique of Paris and other Gastronomical Works translated from the French, we read, "Beware what is sold under the name of catsups and pickles; many cases of debility and consumption come from eating such stuff." We know that his statement was exaggerated, however.

Today we are assured of the wholesomeness of catsup and pickles because canning methods have been greatly improved by the canners' research, and food legislation is a further safeguard of the public welfare.

Many people believe that food could be kept almost indefinitely in the new refrigerators. The idea is not practical from the point of view of economy. The household refrigerator is intended to keep a small amount of food from day to day. The temperature is not ideal for keeping the various foods for a long period of time. Cold storage temperatures for eggs, butter and meats are much lower than the household refrigerator affords. Such low temperatures would not be practical and economical because the food is more palatable when it is not too cold, especially butter and cheese.

A fascinating book, dated 1847, "Webster's Encyclopaedia of Domestic Economy" comments that "Ice, when it can be obtained, is perhaps the best preservative of the freshness of fish." It must indeed have been a serious problem to keep food before refrigeration was available for homes, stores and trucks.

We read that "In Paris, on June 22nd, 1351, an inspector seized some suspected meat in a butcher's shop belonging to a master butcher named Tardel. The meat was examined and certified bad. In the name of the butchers' corporation, which was outraged by such conduct on the part of one of its members, they demanded the degradation of Pierre Tardel on the grounds that he was a poisoner. He was condemned to the pillory and then to be executed. One hundred and twenty-seven Parisian butchers attended his execution standing bareheaded."

Other early food legislation was stringent. In Brussels in 1229, the punishment for adding foreign mat-

FOR ORAL HYGIENE

▼

THE sole purpose of a dentifrice is to aid the brush in cleaning the teeth. It is not necessary to pay a high price for a product expecting that it will do more.

Arm & Hammer Baking Soda and Cow Brand Baking Soda, which cost but a few cents a package, are both approved tooth cleansers, acceptable to the Council on Dental Therapeutics of the American Dental Association.

They are not medicated nor flavored, yet we believe that if you will just try our Baking Soda on your teeth for a week or ten days, you'll come to prefer the clean, refreshing taste that it leaves in the mouth after brushing.

Arm & Hammer Baking Soda and Cow Brand Baking Soda really do everything for the teeth that any dentifrice can do, yet they are so much less expensive that you'll find it a real economy to use our Baking Soda on your teeth regularly.

Business Established in 1846

CHURCH & DWIGHT CO., Inc.
10 Cedar Street New York, N.Y.

ter to wine was to have the thumb cut off; in 1384 the loss of a piece of finger.

Excerpts from the archives of the department of Puy de Dome in France, dated 1481 follow:

"Any man or woman who sells diluted milk shall have a funnel put into his throat and have the diluted milk poured down until the doctor certifies that he or she can swallow no more without danger of death.

"Any man or woman who sells butter containing turnip, carrot or other foreign matter, shall be tied up tightly to the pillory. The said butter shall be placed on his head and left there until the sun shall have melted it entirely. The dogs may lick him and the people torment him as much as they like.

"Any man or woman who sells bad eggs shall be exposed on the pillory and the said eggs shall be given to the children to amuse themselves by throwing them at him."

There is also a common belief that a housewife or any other discerning person, can tell the difference between good food and that which is unfit to serve. As a matter of fact, this really is a task for a bacteriologist. The bacterial count of milk is fixed by local health departments at so many thousand bacteria per cubic centimeter of milk. Milk should be placed in a refrigerator at a temperature about 42 F. just as soon as it is purchased, and used within approximately twenty-four hours.

Purchase meat and fish from a reputable market which has completely adequate refrigeration facilities, have it delivered promptly, and put it in the cold part of the refrigerator at once. Use the food within a few hours.

The senses of taste and smell are simply not accurate guides to the bacterial count and the safety of food.

Another common misconception is that slightly tainted or "off flavor" meat will be safe to eat when it is cooked. When meat is not fresh it should be thrown away. Cooking arrests further bacterial growth, but it cannot possibly restore freshness and make the meat safe to eat.

The fact that you are alive today certainly does not prove that all the foods you have eaten were wholesome and safe. You may have been in particularly good health. The healthy human body has many factors of safety. The only safe policy in the food industry and in the home is the production, storage and transportation of food under absolutely the most sanitary conditions possible today.

Regarding the danger of poisoning from arsenic spray on apples, proper precautions must be taken in using insecticide sprays that food shall not become contaminated with arsenic, copper or lead compounds, and shall not contain one of these compounds in excess of the tolerance established by the United States Department of Agriculture.

Apples as well as vegetables should be washed thoroughly before they are served. Celery, Chinese cabbage, lettuce and all other vegetables should be washed completely free of dirt and dust clinging to them.

Many foods have been said to be poisonous, either when they were first introduced or many years afterward. Spices from far away lands, and the strange foods which Columbus brought home from the new world were looked on with suspicion. In the absence of facts, it was easy to weave fanciful tales.

History records that as each new food was introduced it was recommended or condemned with fanciful and unfounded statements. Often it was said that a food would excite the passions. Nearly every food had such properties attributed to it at some time, except the milk and black bread that formed the diet of the cloistered monks. Sweet potatoes, as soon as they arrived in Europe, were said to excite love and affection and their sale soared. Love apples went down in market price when the tomatoes were found to have no special attributes of this type. Chocolate was once prohibited by Britishers of the puritanical sort. Pythagoras considered beans lustful. Even today we hear strange tales about foods, perhaps started as whispering campaigns to help their sale.

In 1706 there appeared a translation from the French of Dr. Duncan of Montpelier, entitled "Wholesome Advice Against the Abuse of Hot Liquors, particularly coffee, chocolate, tea, brandy and strong waters." It is full of strange conceits, far fetched analogies and classical allusions. In it we read, "Coffee, tea and chocolate were at first used only as medicines, while they continued unpleasant, but since they were made delicious with sugar, they are become veritable poison."

A few years later, in a pamphlet entitled, "An Essay on the Use and Abuse of Tea" after some sixty-three pages of warnings, the writer climaxes his argument with the statement that "tea has greatly hindered the consumption of beer."

In another book dated 1852 we read that "Tea is a real panacea; it removes headaches, prevents vertigos, removes vapours and cephalgic complaints, cures the dropsy," and a long list of other complaints. This is a sharp contrast to authoritative opinion today. Hot tea offers some of the same advantages of any other hot beverage. It is suitable for a person who is cold and tired. When milk, cream, sugar or lemon juice are added, they provide the same food values which they would otherwise provide if taken alone. There is no harm in combining them with tea. The hot tea itself is a mild stimulant, and the stimulating effect is less noticeable when tea is served cold.

It is not accurate to say that "tea is strengthening." Tea is a delightful beverage and has a stimulating effect. A warm or hot beverage is pleasant, it raises the temperature of the stomach contents slightly at the time it is taken, but the temperature soon returns to normal. Tea is suitable for all normal adults, but it is not recommended for children.

While tea and coffee are not commonly selected as suitable beverages for children, many parents let their children have cocoa quite freely, as well as chocolate. Cocoa and chocolate contain significant quantities of theobromine and caffeine. Cocoa and chocolate usually should be used only in small amounts, simply as flavoring for other foods. Cocoa should be used sparingly in the preparation of beverages for young children.

Unlike tea and coffee, cocoa and chocolate furnish some food value. A pound of cocoa furnishes approximately 2,258 calories, while a pound of chocolate furnishes about 2,768 calories. The chief difference is that fat has been removed from chocolate in preparing cocoa.

Chocolate contains 48.7 per cent fat, and cocoa contains 28.9 per cent fat. This difference affects the relative percentages of the other constituents. Chocolate contains 12.9 per cent protein and 30.3 per cent carbohydrate. Cocoa contains 21.6 per cent protein and 37.7 per cent carbohydrate. An ounce of chocolate provides 173 calories and an ounce of cocoa provides 141 calories.

Early literature abounds with both praise and abuse of chocolate. One author in his "Treatise of Hygiene" states that it is "suited as a restorative food to the aged, and to weak and worn out persons." Another author, after listing various adulterations of chocolate, states that "Strong stomachs always bear it." Another curious book published in 1839 was titled, "Tea, Its Effects, Medicinal and Moral." We know today that tea, coffee and chocolate have no moral effects, no strange influence, no restorative powers and that their chemical composition is all that has any bearing on their effect in the body.

Next Month: Faddists, promotors and self-styled teachers of diet.

DIARRHEA AND INFECTIOUS JAUNDICE

The possibility that bacillary dysentery, a type of diarrhea, and infectious jaundice may be related, at least in some instances, is suggested in the report of a simultaneous outbreak of the two diseases in an institution caring for mentally deficient boys and girls, made by Frederick C. Thorne and J. Seeley Estabrook, Brandon, Vt., in *The Journal of the American Medical Association.*

"The association of bacillary dysentery and infectious jaundice in simultaneous epidemics is not a common occurrence," the two men say. "A survey of the literature reveals no mention of such a coincidence, although private conversations with general practitioners in Vermont have uncovered reports of minor seasonal (usually autumnal) epidemics of diarrhea with mild jaundice. Bacillary dysentery is a well known cause of serious epidemics of diarrheal disease in institutions, army camps and other places in which large numbers of persons exist in crowded, unsanitary conditions."

THE RICHEST BOY IN THE WORLD

His name is Jimmy or Teddy or Junior or Bub.

He lives down the street, around the corner, up in that big house on the hill or over on the other side of the tracks in that trim little cottage.

He's an American boy all the way through and he has more to live for than any other boy on the face of this earth. A better home. Better toys. A better car. Better food.

Better food because of great developments in the quality of the American diet.

Among the most significant of these developments has been the recent enrichment of baker's bread with essential food-minerals and vitamins. Important among these are vitamin B_1 or thiamine, nicotinic acid, and iron.

And this new Enriched Bread contains thiamine in such quantities that two one-ounce slices of bread at each meal supply from one-third to one-half a normal child's requirements.

So you see, it's really important always to have a plate of this new, better Enriched Bread on the table, in lunch boxes, on picnics. It's one of the thriftiest ways to help build a sound, physically fit family. And it usually costs no more than regular white bread.

American Institute of Baking

DEPARTMENT OF NUTRITION

10 ROCKEFELLER PLAZA NEW YORK, N. Y.

If the Doctor says "It's Gout"

(*Continued from page 724*)

BREAKFAST

Pineapple juice
Cereal with milk and sugar
Scrambled eggs
Cornbread Butter
Glass of milk

LUNCH

Tomato soup Soda crackers
Head lettuce salad with Roquefort dressing
Hard roll
Half pint bottle of milk or buttermilk
Rice pudding with currant jelly

DINNER

Chilled ruby consummé
Rolled cassava cakes Celery hearts
*Cheese strata
Baked potato Butter
Fresh stringbeans
Lettuce with French dressing
Cherry pie

BEFORE BED

Glass of milk or buttermilk
Fresh fruit

BREAKFAST

Stewed prunes with lemon
Cooked cornmeal with milk and sugar
Scrambled eggs with chopped parsley
Glass of milk Buttered toast

LUNCH

Cream of tomato soup Crackers
Apple and nut salad on lettuce
Hard roll
Half pint bottle of milk or buttermilk
Berry pie

DINNER

Cranberry juice frappé
Macaroni and cheese
Mixed vegetable salad French dressing
Hard roll
*Apple pudding with whole milk

BEFORE BED

Glass of milk or buttermilk
Fresh fruit

MEATLESS VEGETABLE SOUP (5 SERVINGS)

Materials

¼ cup carrots cut in small pieces
½ cup tomatoes cut in small pieces
¼ cup celery cut in small pieces
¼ cup turnips cut in small pieces
½ cup onions finely diced
6 level tablespoons butter
1½ cups potatoes cut in small pieces
1 quart water
1 tablespoon chopped parsley
Salt to taste

Method

Mix all vegetables except potatoes. Cook mixed vegetables for ten minutes in four tablespoons of butter, stirring constantly. Add potatoes. Cook five minutes longer, stirring frequently. Add water and cook over low heat for one hour. Beat with fork to break up vegetables. Add remaining butter and parsley. Season with salt. Pour into hot soup dish. Serve at once.

CHEESE SOUFFLÉ

Materials

2 tablespoons butter
2 tablespoons flour
¾ cup hot milk
½ teaspoon salt
1 pound American cheese, chopped
4 eggs

Method

Make a sauce with the butter, flour and milk. Season with salt. Add the chopped cheese. Stir until cheese is melted. Add beaten yolks of eggs. Cool. Fold in stiffly beaten whites of eggs. Pour into casserole and bake about one hour in slow oven (315 F.). Serve at once.

EGGS WITH TOMATO SAUCE (6 SERVINGS)

Materials

1 tablespoon butter
1 tablespoon flour
1 cup milk, scalded
½ teaspoon salt
2 cups tomato soup
6 eggs
½ cup grated cheese
6 slices hot buttered toast

Method

Make a cream sauce from butter, flour and milk. Add salt. Keep hot in top part of double boiler. Put tomato soup in shallow pan or frying pan and bring to boiling point. Drop eggs in carefully. Sprinkle with half the grated cheese. Turn flame off. Put cover on pan and let remain until eggs are poached. Now place one egg on each piece of hot buttered toast. Pour hot soup slowly into hot cream sauce. Pour this over eggs. Sprinkle with remaining cheese.

SPRING CASSEROLE (4 SERVINGS)

Materials

4 small potatoes
4 small carrots
1 small cauliflower
½ pound American cheese, chopped
1 cup hot thin cream sauce
Salt Parsley

Method

Cook vegetables separately in boiling salted water. Separate cauliflower into flowerets. Arrange vegetables in a casserole. Add chopped cheese to the cream sauce and stir until it is melted. Season with salt. Pour sauce over vegetables and place casserole in moderate oven (350 F.) until thoroughly heated. Garnish with parsley.

DATE-NUT BREAD

Materials

1 cup chopped dates
1 teaspoon soda
¾ cup boiling water
1 tablespoon butter
¾ cup sugar
1 egg yolk
1 teaspoon vanilla
Pinch of salt
1¾ cups flour
½ cup chopped walnuts
1 egg white

Method

Mix dates, soda and boiling water and let stand for twenty minutes. Mix butter, sugar, egg yolk, vanilla and salt. Add date mixture alternately with flour to butter, sugar and egg mixture. Add nut meats. Beat egg white until stiff and fold into other mixture. Bake in a loaf cake pan about forty-five minutes in a slow oven (350 F.).

EGGS AU BEURRE NOIR

Materials

Poached eggs
1 teaspoon of butter for each egg
¼ teaspoon of lemon juice for each egg

Method

Brown butter carefully. Add lemon juice slowly. Stir until well mixed. Pour over eggs.

CHILLED RUBY CONSOMME

Materials

6 small raw beets, washed and pared
1 cup warm water
4 cups tomato juice
1 medium onion, chopped fine
½ cup diced celery
1 medium sized cucumber, peeled
1 tablespoon olive oil
2 tablespoons lemon juice
Salt

Method

Run beets through food chopper and save the juice. Put beets in bowl and add warm water. Allow to stand about ten minutes. In the meantime cook tomato juice, onion and celery in a covered pot for about ten minutes. Cool beet mixture and tomato juice mixture. Strain both. Chill thoroughly. Cut cucumber into small dice (remove seeds if they are large) and chill thoroughly. Mix olive oil and lemon juice and marinate cucumber in this. Now mix beets and tomato juice and add marinated cucumber. Season to taste with salt. Serve in chilled soup plates set in ice.

COTTAGE CHEESE WITH CUCUMBERS

Materials

2 cups cottage cheese
½ cup sour cream
1 small onion chopped fine
½ cucumber diced fine
1 bunch watercress, chopped
Salt

Method

Mix cottage cheese and sour cream until smooth. Add the vegetables and season with salt. Fleck with paprika and garnish with watercress.

CHEESE STRATA (6 SERVINGS)

Materials

6 slices day old bread
1 pound American cheese, cut in small pieces
4 eggs
2⅔ cups milk
Salt (about ¾ teaspoon)

Method

Lay 3 slices of bread in the bottom of a buttered baking dish, fitting them in to cover entire surface. Lay cheese over this. Cover with the other 3 slices of bread. Beat the eggs and add milk and salt. Pour this mixture over the bread and cheese. Put in refrigerator and keep there until ready to bake. Set in pan of hot water and bake in moderate oven (350 F.) about forty-five to fifty minutes until custard is set and bread is puffed up and brown. Serve at once.

RIBBON SANDWICH LOAF

Materials

1 loaf day old white bread
Mayonnaise
Peeled and sliced tomato
Salt
Shredded lettuce
Cucumber, chopped fine
Chopped, hard cooked egg mixed with mayonnaise
Cream cheese, softened with milk

Method

Remove crusts from bread and cut in three lengthwise slices. Spread one slice with mayonnaise, cover with sliced tomatoes. Sprinkle with salt. Now spread both sides of next slice with mayonnaise, put slice on top of tomatoes. Spread this slice with chopped cucumbers and hard cooked egg mixture. Spread one side of third slice with mayonnaise. Put this side of slice on top

HOW TO FEEL "FIT AS A FIDDLE"!
Begin every day right—with a bowlful of crisp, delicious Post's 40% Bran Flakes—the cereal with 2 extra benefits!
YES SIR, IF YOU HAVEN'T TASTED POST'S 40% BRAN FLAKES' SWELL NUT-LIKE FLAVOR . . . YOU'RE MISSING SOMETHING EVERY MORNING!
Post's 40% Bran Flakes
With Other Parts of Wheat
A POST CEREAL MADE BY GENERAL FOODS
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First, Post's 40% Bran Flakes provide bran to help protect against sluggishness. Constipation due to insufficient bulk in the diet should yield to Post's Bran Flakes when eaten regularly. (For cases not corrected in this simple manner, we advise consultation with a physician.)
Second, Post's 40% Bran Flakes are a good cereal source of phosphorus, iron and Vitamin B1 . . . an essential for maintaining good appetite and abundant energy.
Enjoy Post's 40% Bran Flakes every morning . . . to help "feel fit as a fiddle"!

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Describes several typical play schools
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AMERICAN MEDICAL ASSN.
535 N. Dearborn St., Chicago

of egg mixture. Now press slices down well. Spread the softened cream cheese all over top, sides and ends of loaf. Place in refrigerator for at least one hour before using. Place on large platter, garnish with parsley, radish roses and celery curls. Slice in thick slices as you would a loaf cake.

RED FLANNEL HASH
(8 SERVINGS)

Materials

½ cup butter
1 medium sized onion, cut fine
2 cups cooked beets, chopped fine
1 cup cooked carrots, chopped fine
1 cup cooked potatoes, chopped fine
½ cup cooked turnips, chopped fine
Salt ½ cup cream

Method

Put one-half the butter into frying pan. Add onion and sauté until soft but not brown. Add the rest of the vegetables and mix well. Add cream. Season to taste with salt and add rest of butter. Fry vegetables until nicely browned on bottom. Fold over like an omelet.

CORN OYSTERS

Materials

2 cups cream style corn
3 eggs
¼ cup flour
½ teaspoon salt
Fat

Method

Mix corn and beaten egg yolks. Season with salt and add flour, beating until mixture is smooth. Now add the stiffly beaten egg whites. Drop by spoonsfull, the size of oysters, onto a hot, well greased griddle and fry until nicely browned.

OLD-FASHIONED APPLE PUDDING

Materials

6 large cooking apples, peeled and sliced
Butter
1 egg
½ cup sugar
½ cup sweet milk
2 tablespoons melted butter
1 teaspoon vanilla
3 teaspoons baking powder
1 cup flour Pinch of salt

Method

Lay apples on bottom of pudding dish. Add butter and sugar. Add layers of apples until they are 2 inches thick. Mix remaining ingredients as for a cake and pour over the apples. Bake in moderate oven (375 F.) for thirty to forty minutes. Turn out upside down. Serve with cream and sugar.

CREAMED CABBAGE

Materials

1 pint shredded cabbage
1 cup milk
½ cup cream
1 tablespoon butter
1 tablespoon flour
Salt

Method

Cook cabbage for five minutes in milk. Add cream, butter and flour mixed together and a little salt. Cook entire mixture rapidly five minutes longer, stirring constantly. Add more salt if desired.

A week later Mr. Bronson came limping into the office still using his cane.

"Well, well, how are you getting along? Come in and sit down."

"To tell you the truth I don't feel any better. My foot still hurts. But Dr. Jackson insists I really am a lot better—said my NPN was this or that, my XYZ up five points, and my ABC down to 4.4—a regular stock broker. Say, do the doctors all over the country talk this alphabet stuff? Or is it just the ones here?"

I laughed. "Of course they do. And if you had really acquired your gout staying at home reading—as you said you did—you would know all about that yourself."

"Well, anyway, he said I was better and to stay on this diet."

"Now you know you could not expect to see or feel results from a few weeks on a diet of this kind. Your condition itself has resulted, in part at least, from eating habits of months or years, and it is only reasonable to assume—"

"I know. I know . . ."

"Howard Roberts first came in here with his hands just like this—couldn't hold a pen. 'Arthritis of gouty origin' was Dr. Jackson's diagnosis. He prescribed a diet similar to yours. Mrs. Roberts wrote to me every little while and asked about things on his diet. Said he was getting along so well she didn't want to do anything to stop his progress. Then one day Mr. Roberts himself came in—and shook hands with me! He said,

'Look, look at my hands.' And, honestly, a ballet dancer couldn't have moved more gracefully."

It was Mr. Bronson's turn to laugh. "O.K. I'll do the Susie Q up the avenue."

"Good, but don't try it next week or even the week after."

"By the way, I let John Fisher copy this diet. He's been having a lot of pain in his shoulder."

"Now, that's just one thing you shouldn't do. This diet isn't a cure-all. In fact, no diet is. And no one—I don't care who he is—should follow diets except on the specific recommendation of his own physician, after having been given a thorough check-up."

"Now don't get me wrong. I didn't tell John to copy this. It was his own idea. He said . . ."

"I know, but there may be one or more good reasons why Mr. Fisher should not follow this diet. He may not have gout. Every pain in the foot, shoulder or joints is not necessarily gout. Tell him to see a doctor and get his prescription for a diet for John Fisher, if a diet is needed. We don't just sit down and write out diets like you crank a food chopper. We never write a diet except on a doctor's prescription. And a diet which is fine for you is not necessarily right for the next man."

"I know, but John liked the menus themselves—said he'd had diets before, but they were always what not to eat. And he liked the idea of the recipes, too."

"Well, then, do this. Tell Mr. Fisher how necessary it is for him to get his doctor's approval before he goes off on a new diet. Then let him take those menus—if he likes them so much—to his doctor for approval."

"He's just about my weight anyhow and . . . all right, all right!"

"And you stick to this diet. When you go back for your class reunion you'll simply dance right up to the top of West Rock. And the boys will say 'Look at Charley Bronson.'"

"Yes, 'the old so-and-so.'"

Writing corrective diets is one phase of the work done by hospital and consultant dietitians. It is done only in close cooperation with the prescribing physician. No person should ever follow a diet except on the definite recommendation of his doctor. This is only common sense.

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If you've been bothered, like Our Hero, with constipation caused by insufficient bulk . . . then why not get started on the new National Biscuit 100% Bran . . . and you'll be enthusiastic, too!

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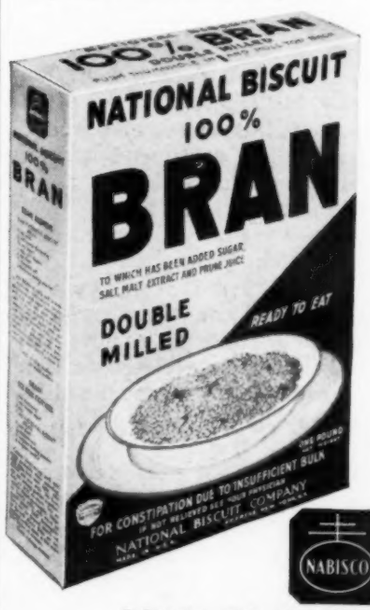

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ACCEPTED AMERICAN MEDICAL ASSN. Council on Foods

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QUESTIONS AND *Answers*

Retaining Vegetable Vitamins

To the Editor:—Is it possible, in the modern refrigerator, for a housewife to buy her vegetables, including green vegetables such as lettuce and celery, and keep them for a period of a week or two without damaging the vitamins in these vegetables?

L. R., California.

Answer.—The evidence indicates that some loss of vitamins may occur in vegetables which are stored for any considerable period of time. The degree of loss depends to some extent on the kind of vegetable but is largely dependent on the temperature at which the vegetable is stored. Vegetables that are stored at refrigerator temperatures lose much less of their vitamin content than those which are stored at room temperatures. One report indicates that acid vegetables such as rhubarb and tomatoes lose no vitamin C on storing at room temperature, but nonacid fruits lose 50 per cent on storage for three days. Cabbage loses vitamin C slowly during storage, and the lower the temperature, the slower the loss. Green leafy vegetables lose both vitamin A and C rapidly at room temperatures, but these losses can be largely avoided if the vegetables are kept cold and moist.

Colostomy Bags

To the Editor:—My father was operated on for an abdominal obstruction necessitating a colostomy (artificial intestinal opening through abdominal wall). Everything seemed to be as it should until he used the colostomy bag. Then the intestine would protrude into the bag to the size of a large orange.

To repair it by surgery would be a major operation and several surgeons advise against it. Surgical supply houses have no appliances for such a condition.

We use a lucite shield with the center raised about a quarter of an inch and perforated. This allows the liquid to go into the colostomy bag but the shield must be removed for solid elimination three times a day. At this time the intestine comes out. The patient must then manipulate the protruding intestine to push it in. Then some one else must quickly apply the shield. I say "quickly," otherwise the intestine will jump out again. Next the bag is applied and with good luck, he can go this way for a few hours. This arrangement is difficult and in the opinion of the doctors, dangerous. We are afraid that the tissue will come through or clog the hole, not only causing an irritation but possibly an obstruction in such a way that we would be unable to remove the thing without injury.

M. F., New Jersey.

Answer.—It has been noted that the colostomy bag has not always given the best results in taking care of a colostomy. By using a simple dressing along with an elastic tightly fitting abdominal belt, the tendency to "cupping" around the colostomy is lessened or eliminated. In spite of all precautions, however, the complications which you describe will sometimes occur.

To advise operation without seeing the patient is impossible. We would suggest first that you consult a reputable and competent surgeon. It may be feasible to remove the excess bowel which telescopes into the colostomy. This may be difficult, perhaps impossible, to do with safety.

If surgery is not possible, other procedures should then be considered. It might be possible to discontinue the use of the colostomy bag. In its place, a large soft type of gauze pad, preferably cellucotton could be used and which would be placed directly over the colostomy, but which could be held in place by a tightly fitting elastic abdominal belt. An ordinary girdle is often satisfactory for this purpose.

In addition to this, it would be necessary to establish regularity of bowel habit. An enema may be given through the colostomy every day at the same time, thoroughly cleaning the colon, and waiting for thirty or forty minutes until as much fecal material as possible has been passed. Surprising regularity of bowel habit can often be accomplished in this way. Naturally, the bowel will prolapse during this procedure, but it can then be replaced and the large cellucotton pad and abdominal support applied.

Preparation of Meats

To the Editor:—We like to boil beef and make soup. In many cases, no matter how good a grade we get of the blade and shoulder cuts, cut, score with a knife and cook for hours, it will be too tough to eat. Soaking in tomato or lemon juice and water is not always desirable and generally a failure. Also cooking with a little water, slow cooking, as expert cooks advise, is often a failure.

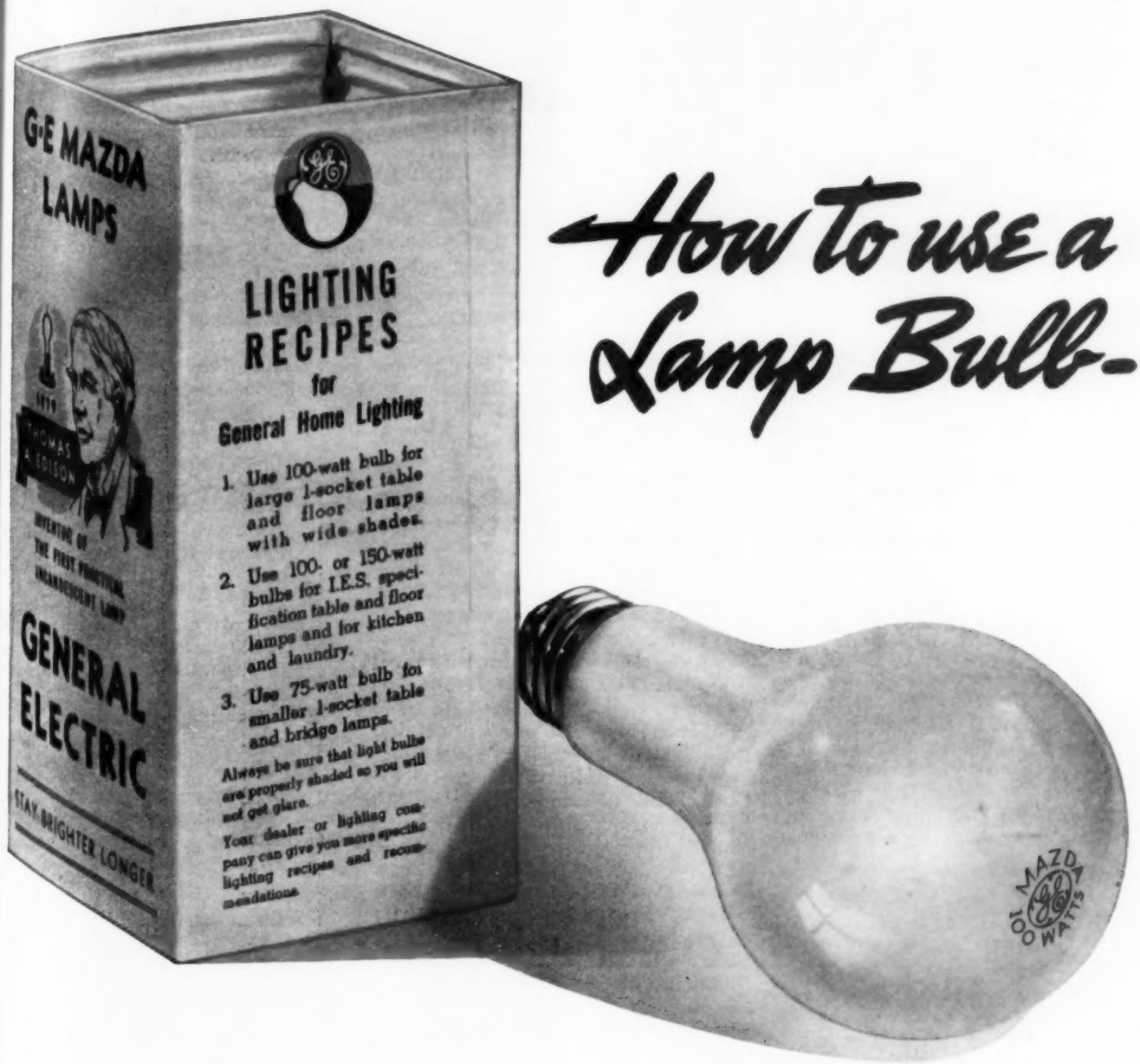
Is there any method we can use, not damaging to the food value?

Some persons claim that pressure cookers will cook any meat tender. Is this true? We hope, however, to be able to find out how to cook it tender without having to use such a cooker.

N. W., Ohio.

Answer.—Tough cuts of meat can usually be rendered tender by long cooking at low temperatures. If appropriate methods, suitable to the cut, are used, the toughness of the finished product is usually due to excessively high temperatures. It is usually recommended that the tougher cuts of meat be cooked by braising or by stewing. In either case, water is used. The temperature of the water must be kept just below the boiling point.

For detailed information concerning methods to be used in cooking different cuts of meat and also for information concerning the use of the pressure cooker in meat cooking, you can write to the following: Department of Home Eco-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100 WATTS

How to use a Lamp Bulb—

BELIEVE it or not, most people *don't* know how to use lamp bulbs. In fact a recent survey shows that four out of five bulbs in sockets that are most used in homes are the *wrong size for easy seeing.*

Because *right size* lamps are so important in securing better light for better sight . . . because they help to prevent eyestrain, save nervous energy, and provide comfort, charm, and safety for every place where eyes are used . . . General Electric is doing two things about it. We print lighting recipes on each lamp sleeve or carton, as shown above. And we have supplied every G-E MAZDA lamp dealer with a chart that shows the right size bulb for every type of lamp and fixture.

Why not check your lighting today for empty sockets and undersized bulbs? Then let your neighborhood G-E lamp dealer help you select a supply of right sizes. Do it today!

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15 and 25 watt . . **10c** 75 and 100 watt **15c**
40, 50 and 60 watt . **13c** 100-200-300 watt 3-lite **55c**

nomics, National Live Stock and Meat Board, 407 S. Dearborn Street, Chicago, Ill.; Bureau of Home Economics, United States Department of Agriculture, Washington, D. C.

Iodine in Fish

To the Editor:—Do fresh water fish contain any iodine?

V. S., Illinois.

Answer.—Fresh water fish do contain iodine but much less than do salt water fish. Values ranging from 10 to 50 parts per billion of iodine have been reported for fresh water fish, whereas volumes of from 250 to more than 5,000 parts per billion have been reported for the salt water varieties. The iodine content of fish as a food is of course largely dependent on the iodine content of the water in which they live.

Raw Vegetable Juices

To the Editor:—A friend of mine suffers from ulcers of the stomach. He eats practically no raw and cooked vegetables because the fibers irritate the walls of his stomach. He is anxious to get a juice extractor and wishes to know whether juices of raw vegetables would be a good substitute.

H. S., New York.

Answer.—The use of home prepared raw vegetable juices may be nutritionally advantageous for persons suffering from gastric or duodenal ulcer, provided expense is not an important consideration. The extraction of vegetable juice is a wasteful process because a large quantity of vegetable usually has to be used to give a relatively small quantity of juice, and much of the vitamin and mineral content remains behind in the vegetable pulp.

The bacterial content of home prepared vegetable juices probably would not be a serious factor if the vegetables are carefully cleaned before extracting. We believe that the bacterial hazard referred to in the April issue of HYGEIA arises chiefly when raw juices are prepared in commercial quantities in street stands and the like, where proper precautions as to health examination of employees may not have been observed.

The selection of the juice to be extracted would depend in part on the preference of the patient. However, some vegetables are more easily and economically extracted than others.

The inquirer states that the person in question eats practically no raw or cooked vegetables. Does this mean that he cannot tolerate pureed vegetables, either canned or home prepared? If he cannot, the vegetable juices would probably be a good solution in his particular case, but his doctor must decide.

Voice Changes at Puberty

To the Editor:—Why does a boy's voice change when a girl's doesn't?

D. W., California.

Answer.—The change in a boy's voice during puberty is due to the action of the male sex hormone produced by the sex glands. The change in voice is one of the secondary male sex characters. The male sex hormone causes the larynx to enlarge, the vocal cords to elongate and the voice to become deeper in pitch. This change in the larynx occurs so rapidly as a rule in the pubescent boy that perfect control of the cords is temporarily lost and the voice is likely to crack. Once the change is completed, the cords come under control in a lower key than before.

Castration of the male before puberty prevents the change in the larynx from occurring and the soprano voice of the boy or woman is maintained. It is of interest to note that eunuchs were produced to serve as singers in some church choirs until the Nineteenth Century. They were known as Castrati.

When the female develops certain types of tumors which produce male hormone excessively, the voice may change along with the growth of a beard. After removal of the tumor the beard and change in voice disappears.

Body "Acidity"

To the Editor:—Is it true that every one should have a slightly acid condition?

E. B., Ohio.

Answer.—It is not true "that every one should have a slightly acid condition."

The word acid has become associated in the minds of many persons with poison and the word alkali with benefit to the human body. As a matter of fact these are chemical words. An acid is a sour substance which has certain effects on the color of chemical test substances or indicators and which combines with alkalis to make neutral substances known as salts. An alkali on the other hand is a bitter substance which has the opposite effect on chemical indicators and which combines with acids to make salts. Some acids and some alkalis are strong and therefore destructive while others are weak and relatively harmless. Some acids are useful, some poisonous; the same is true of alkalis.

So-called acidity of the human body is also a popular fallacy. The human body is neutral with a strong alkali reserve. It never becomes acid except after death and its alkali reserve is reduced only in severe illness or starvation. There are, however, certain bodily secretions which are normally acid and which should be acid. These are the perspiration, the stomach secretions, the urine and possibly the saliva. Attempting to alkalize these normal acid secretions is foolish and useless.

Rhubarb Stems

To the Editor:—Is there a substance in rhubarb which prevents the utilization of calcium in the body?

V. S., Illinois.

Answer.—Rhubarb stems are among the foods which have been reported to be relatively high in oxalic acid. In this respect rhubarb ranks with spinach, Swiss chard, beet greens, lamb's quarter and poke. The quantity of oxalic acid present in rhubarb stems is not toxic. Oxalic acid however forms an insoluble compound with calcium and, therefore, may interfere to some extent with the absorption of this mineral.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a three-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Sex Education for the Woman at Menopause

(Continued from page 701)

thus brought about may result in symptoms of various kinds and grades, the so-called menopausal symptoms, which persist until the internal adjustments among the rest of the glands of the body have been made. A similar upset comes at adolescence when the ovaries begin to secrete; and many of the resulting symptoms parallel those of the menopause, such as temporary overfunctioning of the thyroid, excessive uterine bleedings, acne or pimples due to lowered resistance, and psychic disturbances. The normal physiologic picture is like a mosaic; but the tiles are plastic, so that extra ones may be crowded in and later removed with preservation of the picture by mutual adjustment of parts.

When the elimination of the ovaries comes about too suddenly, or adjustment occurs too slowly, unfavorable symptoms appear which may be serious enough to demand medical consultation. The symptoms and complaints are as varied as the patients themselves and the list reads like a patent medicine advertisement. Of the recorded symptoms, no woman has all, some have only a few. No one knows exactly which symptoms are due to the ovarian deficiency and which are simply an accompaniment to the aging process. Certainly many symptoms called menopausal are simply those appertaining to the fifth decade of life and are common to both men and women. The elimination of ovarian hormones by surgical removal of the ovaries in a young woman does not make her older, although she may for a while exhibit certain "menopausal" symptoms. This removal of the ovaries may serve us as an experiment, albeit a necessary one, for analyzing symptoms due solely to failure of the ovaries. Among these symptoms hot flushes, with or without subsequent sweating, are generally considered specific. These are also the symptoms most readily amenable to substitution therapy, namely the administration of ovarian hormones, now available in the chemically pure state.

No person should attempt to doctor himself either with patent medicines or even with the standard and more or less scientific preparations. The latter should be taken only on the advice of the physician. Occasionally women refrain from seeking alleviation from their suffering on the basis that the menopause is inevitable and all its discomforts must therefore be endured. Why not take advantage of those palliative remedies that have been provided through the instrumentality of scientific research? These and the comforting counsel of the gynecologist and, when needed, of the psychiatrist should be utilized. Not to do so is not only foolhardy but may be dangerous. It is the part of wisdom, too, for every woman over 40 to consult the physician whenever the menstrual flow is excessive or irregular and especially when there is "spotting" between menstrual periods. These phenomena may be danger signals of cervical or uterine cancer and periodic examinations, therefore, often forestall dangerous advances of incipient cancer. So important are these examinations, indeed, that before the war in some countries free clinics had been organized for this purpose.

It is, of course, natural for any woman to have some regrets on approaching the menopausal age. She feels the loss of charm inherent in youthful beauty and figure, and often she has experienced certain disappointments attendant on raising a family—or on not raising one, as the case may be. She may, moreover, due to her endocrine imbalance, no longer be strong enough to endure disappointments without some psychic disturbances. But with resolve and reliance on the inner resources of the mind, which increase with age, she can and does weather the menopausal period and emerge with many of the attributes of youth combined with

(Continued on page 756)

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The War on Brother Rat

(*Continued from page 716*)

rat fever cases are available. However, in 1939 there were 58 cases and 4 deaths in the city as compared to 31 cases and no deaths the previous year.

Government tests conducted on a nationwide basis and under all conceivable conditions show that red squill powder is the safest and best rat poison in America. If properly used, it destroys at least 75 per cent of all rodents treated. This raticide is made from a kind of sea onion native to the Mediterranean countries. Toxic powders should be mixed, Uncle Sam says, which will insure a killing dose even if the rat eats only a small quantity of the poisoned baits. All rats poisoned in this way should die within five days. The poison paralyzes them. Baits used with red squill are fish, meat, cereals, fruits and vegetables.

In Washington, D. C., the United States Public Health Service, WPA, Boy Scouts and public school officials are being called on to help fight a battle to the finish on the rodent population. It is estimated that there are three quarters of a million rats in the capital area. Authorities, fearing that they may be carrying the dangerous fever spreading flea, have decided that the rats must go. They will be exterminated by means of traps borrowed from the Public Health Service, and baited by experts with cheese, chipped beef, salmon and poison. The Service will lend three officials, experienced in trapping, to the District, for the campaign, which will be concentrated in slum areas.

The main reason for the Washington campaign was the reporting of 2 cases of rat-bite fever in recent months. The control program was planned after the first case was reported. Within a two day period the city sanitary inspection bureau answered 250 rat complaints from householders. Plans are underway for a city-wide drive; printed instructions for the baiting and trapping procedure will be distributed to home owners by the bureau.

In Baltimore, no formal extermination campaign is now underway according to latest reports. However, in 1934 when PWA workers were conducting a rat cleanup there, professional exterminators estimated conservatively that some 3,000,000 rats were killed every year. In 1934 the *Baltimore Sun* said the daily average catch by government eradicators was 300. In 1939 when the United States Public Health Service cooperated with the Baltimore Health Department and the city housing authority in an extermination program in 5 slum-clearance areas, a barrel of dead rats was delivered every day to the city's largest incinerator.

But rats do not keep to the slums and the industrial and wholesale market areas. They go wherever there is food and cover and today that means that they are swarming by the million in most of our large cities. It is hard to determine which section of the nation suffers most from these rodents, but many investigators claim it is the Midwest, the big corn center, since rats are especially fond of this grain. West of the Rockies, domestic rats are found only in communities on the Pacific coast, in the valleys of formerly navigable rivers and in a few other isolated places. This situation greatly reduces the disease hazard to human beings.

Fortunately for the health of the nation, most big cities now have a police regulation requiring citizens to keep garbage and trash containers tightly closed. The best weapon against the four-footed predators is cleanliness, which means quick and

efficient removal of garbage from homes, restaurants, hospitals and industrial establishments. The other main approach to the problem, so far as the average householder is concerned, is to try to keep down their numbers by trapping and poisoning. The procedures are easily obtainable since all that is necessary is to phone your local health department for complete information.

Fumigation with hydrocyanic acid gas is the Public Health Service's most effective means of reducing a large rat population aboard ships. In this connection two new pieces of equipment have been developed. One is a pump which forces the gas into the tiniest rat harborages. It can be operated easily by one man. The other apparatus is a more efficient type of gas mask that affords the fumigator fool-proof protection against the life snuffing fumes of the poison.

At the ports of Boston, New York, New Orleans, Galveston and other leading Eastern and Gulf coast cities not long ago a plan requiring examination of all incoming American vessels at piers in connection with Uncle Sam's new drive on rats was presented to coastwise shipping representatives by the Public Health Service.

Foreign vessels already are subject to a strict examination on arrival at quarantine. The new plan requires examination of American vessels at piers, but will not force the ships to stop at quarantine.

A similar plan is expected to be presented soon to West coast shipping interests. For plague rats are infesting many ships that come in from time to time to the important ports of San Francisco, Seattle, Tacoma and Portland.

All United States docks and many of them at foreign ports are required by law to be equipped with rat guards. A rat guard is a large metal disk about 18 inches in diameter which is fastened around ropes and hawsers used in mooring ships to docks. It is designed to prevent rats from getting ashore and spreading disease.

There's no use taking an alarmist's viewpoint on the rat situation. But Uncle Sam is taking no chances. He is taking every conceivable precaution through national, health, city and county agencies.

Beauty As Usual

Beauty is not a luxury; it is a necessity, an essential part of our way of life. Since the outbreak of war the sale of beauty aids in England has increased. The average woman over there regards her "beauty kit" as an indispensable part of her bomb-shelter equipment . . . . The psychology of caring how you look is fundamental in the morale and self-respect of a free people . . . . In the tropics British army officers dress for dinner, not because they particularly like to "dress up" but because they know from experience that the discipline of keeping up one's appearance is essential to the psychology of enduring climatic conditions which cause many white men to "go native" . . . . As long as people have self-respect we'll enjoy Beauty As Usual. And as long as our way of life persists we'll continue to enjoy self-respect. (To defend that way of life Buy United States Savings Bonds.)

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KANSAS CITY, MO.

CLOTHES that FIT

The fact that only 2 women in 46 had so-called "average sized" children is reason enough for a new sizing method.

"SIZE 12 in a garment made by one company is size 10 in another and size 14 in another."

"Different quality garments differ in size; the cheaper garment is usually smaller."

"Garments, such as underwear and pajamas, that fit across the shoulder and hip, are too short from shoulder to hip, the sleeves and pants are too long, and the waist is too long."

"The neck openings are not elastic enough. They are too tight for the head, and do not return to the original shape. It is suggested they open on either or both shoulders."

"Many materials are dyed with colors that 'bleed.'"

"So few dresses are styled for the chubby type girl."

"There are not enough plain suits and sweaters made for 3 to 6 month old boys."

These are some of the pet peeves harrassing you mothers out to supplement your children's wardrobes.

A questionnaire on children's clothing, sent to 55 mothers belonging to the Rochester, Minn., branch of the American Association of University Women, revealed several startling things. That 46 questionnaires were returned, shows the general interest in this subject. All but two women objected to the present method of sizing clothing according to age. These two women were the only two in the 46 who had so-called "average size" children. The fact that only two women in 46 had "average size" children is certainly an argument for a new method of sizing.

About 50 per cent of the women mentioned some special peeve on the present method of sizing. The number of mothers who found it difficult to buy according to the present method of sizing are shown in the following table.

Article	No. of Mothers
Underwear	22
Sleeping Garment	21
Dresses	20
Complete Garment	19
Pants	18
Shirts	17
Sweaters	16
Suits	15
Hats	14
Coats	14
Slips	11

Over 50 per cent of the women were indignant about the construction of many garments now on the market. Beside the neck opening and shoulder to hip measurement already mentioned, mothers find sleeve holes and leg openings too small and too tight. They object to button holes that pull out, and buttons sewed on with chain stitch. Except for tiny baby things, they prefer snap fasteners.

Most of us agree that something should be done about the method of sizing and constructing children's clothing. In 1937 the Bureau of Home Economics, using Works Progress Administration funds, sponsored a survey of 147,000 boys and girls between 4 and 17 years

By BARBARA F. FRIEDELL

of age. The purpose of this project was to set up standard sizes for children's clothing and clothing patterns. The children were from fifteen states throughout the nation and the District of Columbia, and represented various economic levels. Thirty-six measurements were made on each child by trained workers using standardized equipment and methods. The measurements were chosen after consultation with retailers and garment and pattern manufacturers in order to recommend dimensions to be used in constructing the mannequins used by these manufacturers to size garments and patterns. A preliminary report of this study titled "Children's Body Measurements for Sizing Garments and Patterns," Miscellaneous Publication No. 365, has been published by the United States Department of Agriculture.

The measurements taken were correlated in many ways. From these correlations, it was found that when a child's height is known, his other lengths can be predicted fairly accurately. Stature and weight in combination is as effective as stature and girth of hips, for predicting the other measurements. Hip girth is not only more reliable than chest girth, but it can be more accurately measured by the layman. Weight was rejected because, while every family does not possess a scale, it usually has a tape measure. A system of sizes was then obtained by marking off intervals of height and hip measure on a distribution table giving the numbers of children having different combinations of height and hip girth.

From this study, the Bureau concludes:

(1) A child's age is definitely a poor indication of the size garment that will fit him.

(2) A combination of height and hip measurement is recommended

Her gold-touched hair reflects the light
Of sunshine in each glistening strand,
While sun-stirred health, at glancing sight,
Speaks clearly in that chubby hand.

For Happier Tomorrows, Provide Enough VITAMIN D Today!

Your children's future happiness—their adult charm and personality—are largely dependent upon the health and joy of formative years. Under sullen autumn skies, dressed for necessary protection against wet and cold, young bodies fail to get adequate Vitamin D, the "sunshine" vitamin so essential to sturdy, well-formed bones and fine sound teeth.

Careful mothers supplement their family diets with extra quantities of this precious vitamin through regular, daily use of Vitamin D Milk. A welcome drink for home-coming children, and desirable in your cooking, this milk brings needed calcium and phosphorus... plus Vitamin D to enable the body to use these minerals effectively. The Foundation-licensed dairies offer Vitamin D Milk, Irradiated, Fortified or Metabolized. All are valuable, each an important weapon against rickets, the Vitamin D-deficiency disease of children . . . and an aid to better nourishment and protection of bones and teeth of young and old.

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Our Food and Our Teeth, by Percy R. Howe. 4 pages. **5 cents.**

The Care of the Teeth, by William M. Gardner. A study showing why the toothbrush has failed. Improper methods of brushing the teeth, the importance of applying pressure and proper toothbrushes and dentifrices. Illustrated. 18 pages. **15 cents.**

Dental Nostrums and the Public Health, by Samuel M. Gordon and Eleanore Dufour. Three articles on the promotion of dental nostrums and dentifrices. 32 pages. **10 cents.**

What the Mouth Can Tell, by Lester R. Cahn. 4 pages. **5 cents.**

Taking the Child to the Dentist, by William M. Gardner. 4 pages. **5 cents.**

American Medical Association
535 N. Dearborn Street **Chicago, Ill.**

as a basis for sizes of patterns and garments.

Using the measurements gathered in this study, the American Standards Association Committee on Sizes has been working with buyers and clothing manufacturers to put this system of sizing into effect. The change from the old method of sizing to the new one is a drastic and expensive step for the manufacturer. He needs your encouragement. He must know you want clothing sized according to these statistics. What is needed now is for mothers to express themselves forcibly enough to convince manufacturers and distributors that they really want this standard method of sizing. Do not hesitate to tell your saleslady what feature you object to in the garment you are purchasing. Encourage the store buyer to acquaint the manufacturer with your problems and with your desire for the height and hip method of sizing. Mothers who know are in agreement with you.

Some companies are beginning, independently, to use the height and hip method of sizing. They are trying to accumulate statistics on measurements of children under 4 years of age. Aid this work by returning the questionnaires accompanying the clothing you buy. Inquire if the garment you want is sized by height and hip measurement. You will doubtless find satisfaction from such a garment, and by your purchase encourage this new method of sizing.

Noses (*Continued from page 718*)

By subtracting the height (length) of the nose from the anatomic height of the face, thereby separating the dental arches and the lower jaw from the rest of the face, the anthropologist obtains an accurate gage of the relative development of these features. For this reason, the nasal measurements are always of interest anthropologically.

In his wide and valuable contributions in the field of anthropology, Dr. Hrdlicka has spent many years in the study of the history of man, has traced the common origin of the gorilla, chimpanzee and orang-outang back some twenty-five million years. His findings are substantiated by scores of early human skeletons and great numbers of bones of extinct animals, gathered from all parts of the world. This tremendous amount of valuable material, preserved in the United States National Museum in Washington, has been made freely accessible to men of science.

Dr. Hrdlicka commented that the results of his nasal measurements research were likely to prove disappointing to persons expecting the sensational. He feels, however, that they are distinctly valuable because they show clearly that no definite, already formed, strictly American type or subtype of whites as yet exists. And as intermarriages of Old Americans with more recent immigrants in this country are rapidly becoming more numerous, there is little chance for the formation of a distinct American type, at least within many centuries. Yet, if Old Americans could be kept in full vitality and free from intermixtures, there would eventually come into existence in this country a separate subtype of white people possessing numerous characteristics distinctive from European whites.

Do You Fear Cancer? (*Continued from page 713*)

Among the pertinent questions asked of the physician are the probability of cure, the approximate cost, the length of hospital stay and whether postoperative irradiation will be required. Only with early cooperation of the patient will the rising percentage of cancer cures increase more rapidly. All patients should see the doctor at regular intervals and those in whom there has been a family history of cancer should promptly see their physician at the slightest deviation of any of their bodily functions. Cancer phobias are definite hindrances to the prevention, treatment and cure of cancer.

In the moto-kinesthetic method the child sees the correct way to make the sound, he hears the proper sound and he also feels the right way to make the sound.

The Children's Speech Clinic: II

By RUTH E. BECKEY

SPEECH IS NOT INHERITED! If you had been placed on an island when you were only 4 months old, with only animals for company, you would not have learned to talk. You would have communicated your needs in much the same manner as the animals did. The child born in China of American parents will learn to talk Chinese like a native, especially if he hears no English spoken. Speech is a learned process. We learn to talk by hearing others talk.

In learning to talk, the child goes through much the same experimentation that primitive man did. The child gesticulates a great deal to express his wants and dislikes. His most frequent responses are against emotional situations relative to his well-being. As the child matures emotionally, intellectually and physically, he learns speech according to the stimulations provided by his environment.

When did your baby say his first word? Some of you will say, "Oh, he said 'mama' and 'papa' when he was about a year old." Of course, some children start talking sooner than others because of more rapid maturation of the nervous system, higher intelligence, or because of certain environmental factors. The average age for beginning to say words is from 12 to 15 months.

The first vocal response of the baby is the birth cry. During the first month almost all the child's vocal responses are undifferentiated. He cries for everything. You do not know whether the crying means that he is in pain, in hunger, or whether he wants attention. You may attempt to differentiate, but your judgment is mainly guesswork.

From the third to the tenth month, the child begins his vocal play or babbling which is the source of spoken language. Socialized vocalization by which the child seeks attention, expresses his desires and resists opposition usually begins about the fifth month.

The sound-imitation or lallation period usually begins during the sixth month. The child imitates his own sounds for the pleasure he derives from hearing himself. This period is important in the development of the kinesthetic or "feel" sense of speech.

Following the lallation period is the echolalic period in which the child imitates the sounds he hears, but does not have any understanding of them. This activity begins about the ninth month.

The next stage or the language-comprehension period occurs long

THUMB SUCKING

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Trimfoot Pre-School Shoes with "Cuddle Back" seamless heel construction are designed to keep the heel back where it belongs, to preserve the proper relation of a well-fitted shoe to the foot in action!

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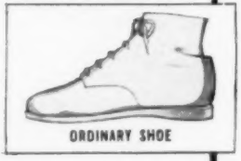
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A teacher shows a child with either delayed or defective speech how to say "ka," the beginning of the word "cat."

before the child is able to use language with any real facility. He begins to associate words with certain objects. This stage usually starts about the beginning of the second year. At this time the child needs to receive proper stimulation to encourage his talking.

Happy situations surrounding the child will encourage speech development. The baby learns to talk by associating pleasant experiences with speech situations. When the baby babbles, "papa," "mama," "baba," parents often think, or make themselves believe, that the child is saying his first word. If the mother fortuitiously enters the room as her child says, "mama," she beams! Her baby has said his first word, so she smiles and perhaps caresses the baby lovingly. Every time the child sees the mother, he says, "mama," as he remembers the previous pleasurable experience. So the child's early speech responses are often conditioned by accompanying happy situations.

Perhaps your child is slow in learning to talk. If he is past 2½ or 3 years of age and does not have adequate speech or any speech at all, then you should seek the advice of a speech specialist. The average child is putting words together in sentences before he is 2 years old.

Instead of using speech as a means of securing an object of his desire, the child with delayed speech uses gestures and noises. Asking for a drink of water becomes a jerky gesture toward the sink accompanied by an urgent, grunting noise. If the delay continues beyond thirty-six months, the child may develop extreme negativistic attitudes and refuse any help that might rehabilitate his speech. For example, Betty was the 7 year old daughter of a physician. She was a beautiful child with seemingly normal intelligence, although an accurate check on the intelligence of nonspeaking chil-

The word "cat" is finished when the teacher shows him how to place his tongue to produce the sound of a "t."

dren is impossible. Her only word was "bye-bye," often the first word of a 12 month old baby. Betty was making all of the sounds necessary to speech in her numerous babbling noises that she made as she played. She could carry tunes with no trouble at all. Her case history showed no particular factor which might have caused her trouble. She was a strong-willed child whose mother was the opposite type. Since the parents did not bring the child to the clinic soon enough, a strong aversion toward speech activity had been developed. Betty made no attempt to cooperate with her instructors. Instead, she deliberately resisted their efforts. Her parents waited too long before seeking any speech help.

Children without speech like attention, but certainly not the attention that will necessitate speech responses. Imagine some kind, interested person asking a speechless child, "What is your name?" Parents should guard against making the speech difficulty worse by unnecessary comments about the child in his presence, or making the child feel any more inferior than he already does. The more intelligent the child, the more will he sense his handicap.

Many factors may have been responsible for your child's delay in speech development. No one factor can be said to be more important than any other. Jimmy may have had a severe birth injury which was responsible for his poor development; Mary may have been severely frightened at the time she was beginning to learn speech; or John may have had some severe disease at his speech-learning period. What causes delayed speech in one child will not cause it in another. Furthermore, three or more disturbing factors are necessary to cause the average case of speech retardation.

The usual reason given by many authorities for delayed speech is mental deficiency. However, parents need not conclude that their child is mentally deficient to the exclusion of all the other possible factors affecting their child's inadequacy in speech. Investigations have revealed that mental age often increases after the child has begun to talk.

If the child has poor motor control, an injury to the central nervous system may be suspected. Prolonged labor during birth of the child may have produced an intracranial hemorrhage which would cause brain damage. Early forceps delivery might have avoided this.

In addition to possible cerebral birth injuries, various lesions of the brain and nervous system may have occurred as a result of some severe infectious disease. Of all the diseases, measles has been found to appear more frequently among children with delayed speech. Measles has been known to cause lesions in various parts of the neural structures.

Although no significant findings have been made in regard to handedness and delayed speech, the child with no speech tends to lack hand preference. Since speech is supposed to be a function of the dominant hemisphere of the brain (right side for left-handed people, and left side for right-handed people), the early establishment of a hand preference naturally will lead to greater language facility.

Parents often anticipate the wants of a child in such a way that the child feels no need for speech. He succeeds in having all of his needs fulfilled through the use of numerous gestures and grunts. The mother and father are pleased with this type of expression and feel that the child is a "cute little actor." The continuation of such practice, however, delays speech development.

Prevention of speech disorders is as important as prevention of diseases, and must be studied by parents, teachers and physicians. If possible, one should prevent the speech difficulty through study of the causes. If prevention is impossible, then early treatment is extremely important, especially with speech-retarded children.

To encourage speech development during the speech-readiness period (twelve to thirty-six months), the parents may utilize these various means: (1) repetition of the baby's happiness (unwise to stimulate before the seventh month), (2) creation of pleasant situations to accompany the learning of the first words, and (3) use of short sentences with simple words. If the child does not develop speech by the age of 2½ or 3 with this encouragement, no time should be wasted before seeing a speech specialist. A delay may mean that the child will never

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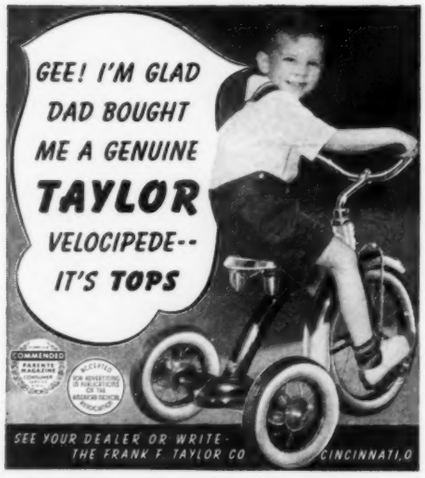

BOOKLETS for MOTHERS

• *The Thoughtful Gift* •

"Bad Habits in Good Babies"
Thumb sucking; crying; feeding; shyness; stubbornness; bowel and bladder control. 16 pages. 15c.

"Keeping Your Baby Well"
General advice on infant care and feeding. Prenatal counsel; the newborn baby; breast feeding; weaning. 22 pages 10c.

"What Does Your Baby Put in His Mouth?"
How to prevent accidents from choking and what to do if they happen. Generously illustrated with x-ray pictures and photographs. 24 pages. 10c.

American Medical Ass'n, 535 N. Dearborn St., Chicago

The X-Ray shows how outgrown shoes twist and warp delicate, undeveloped infant feet. It's best to buy inexpensive shoes *and get a larger size often.*

All over America there are baby doctors who recommend WEE WALKER shoes because they are soft, flexible, roomy, and correctly shaped to give baby "barefoot" freedom, and yet are very low in price. See WEE WALKERS . . . compare them with shoes priced much higher. Infants' Wear Department of the following *low-profit* stores:

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Pair FREE to Doctors: Please write for measuring scale to decide size wanted. Use prescription blank. Moran Shoe Co., Dept. H, Carlyle, Ill.

WEE WALKER Shoes
FOR *wee* WALKERS

learn to talk, or that he may have more difficulty in learning, or that he may develop some unfavorable personality traits.

The three methods of approach for the treatment of the speechless child are through the auditory, visual and kinesthetic senses. The child must be able to hear speech, to see speech and to feel speech if he is to develop properly. However, a physical inadequacy in any one ability may have delayed the child in developing speech at the normal age. Through the stimulus-response method the child may be stimulated to say a certain word by repeating the word to him three times, asking the child to listen carefully and to watch how you say the word. After repeating the word several times, the helper asks the child to say the word once. With this type of stimulation, correct sound formations often may be made. However, the entirely speechless or extremely young child must usually have the added help of the moto-kinesthetic treatment applied directly to the speech articulatory organs. Only a speech expert who is familiar with this particular technic can use this method on your child.

Therapy has been merely suggested here, since the speechless child must have the careful guidance of a speech specialist. However, the parent can promote speech growth by attempting to prevent the causal factors of speech retardation, and by encouraging the child to talk during the speech readiness period.

Next month: the substitution or omission of sounds in words.

Sex Education for the Woman at Menopause

(***Continued from page 747***)

those of dignified, contented and comfortable old age.

Suggested Readings

"Life in the Making" by A. T. Guttmacher and E. Rand. Cloth. Price, $2.75. Pp. 297. New York: Viking Press, 1933.

"Time of Ovulation in Women" by C. G. Hartman. Cloth. Price, $3. Pp. 228. Baltimore: Williams and Wilkins Co., 1935.

"Woman's Change (Prime) of Life" by Isabel Hutton. Cloth. Price, $2. Pp. 150, New York: Emerson Books, 1937.

"The Woman Asks the Doctor" by Emil Novak. Cloth. Price, $1.50. Pp. 189. Baltimore: Williams and Wilkins Co., 1935.

REPRINTS

The following articles in this series on Sex Education have been reprinted and are now available in pamphlet form:

For the Preschool Child, by Harold E. Jones, Ph.D. and Katherine Read.

For the Ten Year Old, by George W. Corner, M.D.

For the Adolescent Boy and Girl, by M. Marjorie Bolles, Ph.D.

For the Married Couple, by Emily Hartshorne Mudd.

For the Woman at Menopause, by Carl G. Hartman, Ph.D.

Prices:	1 to 4 copies, each 15 cents
	5 to 24 copies, each 10 cents
	25 to 99 copies, each 6 cents
	100 to 249 copies, each 5 cents
	250 or more copies, each 4 cents

Prices apply to any assortment of titles. Remittance should accompany order.

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago, Ill.

NOTICE

The illustrations for "Sex Education for the Adolescent" by George W. Corner, July 1941, page 525, were reprinted from the books, "Attaining Manhood" and "Attaining Womanhood," by Dr. Corner. They were published by Harper and Brothers.

Living with Heart Disease: I

(Continued from page 710)

the gentleman with the benign murmur: She has outlived her doctor!

Another kind of heart disease that needs an early diagnosis by the doctor is thyroid heart, or thyrotoxicosis. If "goiter" is found to be a causal factor in the heart disturbance at a comparatively early stage, the person can be cured and may well live to old age. But the cause, the goiter, must be eliminated. A lady, now happy in her three score years and ten period was afflicted six years ago at the age of 68 with a rapid heart. Her ailment was found to be due to hyperthyroidism, or so-called "goiter heart." Surgery mended her goiter, and the heart thereafter mended itself. She is a housewife of simple tastes, and now enjoys her life as though her heart had not been a runaway. Goiter heart is like a hurricane. When the operation is over, the cardiac lashing ceases and quiet prevails. This is another type of upset heart that can be cured at three score years and ten!

By contrast, consider the many cases of chronic heart disease encountered in older people who live out their final years in "homes." In "homes" for old ladies, many women in the later decades of life (65 years is young) have been afflicted by adversity, as well as high blood pressure, arteriosclerosis and some form of heart ailment. Yet they carry on unsung with banners flying. The cloistered life of any institution is not what every one would choose, but in the beleagued life of 1941, it may not be as hard as for youth to sleep in air raid tunnels. One is put to shame to see the useful lives that many of these women pursue. They sew fine stitches for charity, and care for each other in true communal fashion. One woman of 87 is setting up stories in braille which she has painstakingly learned. Yet she has had a cancerous growth removed, has high blood pressure and considerable arteriosclerosis and rheumatism. Another lady of 89 with rheumatic heart disease has recently inherited a fund which was to be expended in taking her to church in a taxicab. Instead, she enlarges the purpose of her legacy and takes a half-dozen of these ladies from the "home" for a ride in the country on days when walking would seem difficult for those whose bones are brittle and whose hearts are easily tired.

Yet another octogenarian lady lives in one of the "homes" designed for the final stretch of marital teamwork. Her husband, a doctor, was a Darby of note and had made life a cradle for Joan in her failing health. But he passed on—and she was alone in this home. She has been observed for eighteen years with blood pressure progressively rising until now at 80, it is 250/120 (a high spot for a blood pressure). Notwithstanding her infirmities and the loss of her Darby, she is a keen analyst of books, is enthusiastic about the theater and the "movies"—and Joan is happy in the "old people's home" while waiting to join her mate.

Long life gives perspective to the years. And an historical perspective of longevity shows that in all ages men have sought the secret of long life. Among the earliest seekers were the Arabs who were imbued with the wisdom of the Indians, Egyptians and Greeks. In fact, the Arabs kept the flame of knowledge burning brightly while it barely smoldered in Christian countries. While the Arabs were not allowed to dissect animals, they made great advances in chemistry, materia medica, pharmacy and nosography, and their influence is felt even today. In fact, chemistry, or alchemy as it was called, is a science of arabic origin, and comes from "al"—Arabic for "the," and "chemy"—Greek for "pouring" or "mixing." The two main objects of this Arabian medieval chemical science were to transmute baser metals into gold and to find the "philosopher's stone" to prolong life indefinitely. Ponce de Leon sought the

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If your drug or toilet goods counter cannot supply you with Takamines, send 60c to us for INTRODUCTORY package of 6 Standard Takamine Toothbrushes.
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SEND COUPON

"fountain of youth." In our own time Carrel has at least been able to make the heart cells of a chicken live independently of the chicken for more than twenty-five years. But although the germ of human life has continuity, life thus far has evaded attempts of man to render it continuous in one body. Centenarians are still news! Thus far one hundred years seems about the longest span of life that can be attained. When nine decades with heart disease are achieved, it is something to report.

"Chronic diseases are now on the upgrade" state the statisticians of the Metropolitan Life Insurance Company, for they say that about three out of every four children now born will die from chronic disease (of which heart disease will no doubt account for the major share) ". . . while acute diseases will take only one in six." Thus, at the beginning of the Twentieth Century one child in three would have been killed by acute disease. "Biological science has indeed increased the span of life when so many will live long enough to die of a chronic ailment." Irrespective of the strides of preventive medicine in saving youth by the conquest of acute diseases, many a boy has vainly asked in the last ten years—"for what?" No jobs, but now jobs as fodder for guns. Who knows? If more care were given to the aged, fourth and fifth decade dictators might not be allowed to sacrifice second decade youth whose health science has been so successful in conserving. Longevity in heart disease may be but the beginning of exceptions to many rules. Health, wealth and happiness may yet be gained through building healthy hearts in the aged whose vast fund of experience the world could well use. "The promises men live by" may some day become realities in healthy youth, middle age and old age, if prevention of disease of body and soul is pursued in all countries at all times.

"The problem of aging was of little general interest because until recently it could hardly be said to exist. But life expectancy since 1930 shows that it has passed 60 years and an analysis of the past decade unquestionably indicates a still further increase in the expectancy of life," states a well known authority. He further states that "the basic factors largely responsible for the marked improvement in longevity that has taken place in the last half century have largely centered in the earlier years of life." Dr. Aten bears out this point of view when he says: "Most of our mortality savings have been in the first year of life, particularly the first thirty days." In the time of Jesus twenty to thirty years was probably the average length of life. If preventive medicine has added twenty to thirty years to life expectancy, with the marriage of the clinic and the laboratory what may we not expect of the next century?

There is an increasing number of older people in the United States. But suppose we do save youth from the ravages of acute disease, on the other hand the birth rate in the United States was 30 per 1,000 in 1900 but is only 16 per 1,000 at the present time. At this rate there will be fewer to save at the beginning of life and more at the end! The Metropolitan Life Insurance Company also estimates that since the turn of the century there has been a decided increase in deaths from "external causes" such as suicide, homicide and accidents, and many of these deaths occur among the young. And the scythe of war takes not only the physically fit young male, but also leaves behind the trail of bombstrewn wreckage of civilian population, the women, the children, and the physically unfit males. Prevention of disease in the adult and the salvage of all grades of human life should become a crusade against war. No less an authority than Piersol states "Today those of 65 years or more make up 6 per cent of the total population. Less than one hundred years ago they made up only 2.6 per cent of the total population. Therefore, there is a startling increase in the number of older people with far-reaching possibilities for our social, economic and political life. The aging process is a vital process." And heart disease is the number 1 cause of death in older people.

At the recent annual meeting of the American Public Health Association, Prof. W. S. Leathers demanded building for health defense: "There is perhaps a greater need today to look beyond the present emergency to the period of recovery from the horrors of war. There is an old Irish saying that 'man is twenty years a-growing, twenty years in blossom, and twenty years declining.'" He would extend the blossom period to 30 to 40 years. ". . . it would not only be a great advantage to the nation to lengthen the productive period of skilled labor and of men and women of energy, talent and efficiency, but it would also be a means of increasing the life span."

Another authority states the case for longevity in general: ". . . physical disablement due to aging will also appear at widely scattered ages; say at age 50 in some, at 80 in others . . . Aging is a biologic phenomenon . . . It has been pointed out that natural death, death from natural decay, occurs rarely in man." It is a well recognized fact by medical men that certainly physiologic age is not always identical with chronologic age: certain people's bodies belie their years. A young man of 26 may have the arteries of a middle-aged man of 46—and the other way around. Take the story of the man of 75 who asked two girls to guess his age. The first guessed 65 and the second 63. The young old man replied "No, 75." Said both girls in unison: "How do you do it?" His answer: "I don't." Therein lies the secret—no gloomy thoughts of the morrow. Sir Thomas Browne, that wise physician of the Seventeenth Century wrote in "Religio Medici": "And truly there goes a good deal of Providence to produce a man's life into three score, there is more required than an able temper for those years: though the radical humor contain in it sufficient oil for 70, yet I perceive in some it gives no light past 30. Men assign not all the causes of long life that write whole books thereof."

The concluding portion of this article will appear in the October issue.

CANCER OF THE STOMACH

The possibility that certain types of cancer growths of the gastrointestinal tract may be diagnosed by means of a gastroscope (an instrument for inspecting the interior of the stomach) is suggested in *The Journal of the American Medical Association* by C. Norman Giere, El Paso, Tex.

BOOKS ON HEALTH

The Virus: Life's Enemy

By Kenneth M. Smith, F.R.S. Cloth. Price, $2. Pp. 176. Illustrated. New York: The Macmillan Company, 1940.

The first demonstration of the existence of a virus disease was made by a Russian botanist, Ivanovski, in 1892. He passed the sap of a diseased tobacco plant through a Chamberland filter and then showed that the filtrate, although free of all bacteria, had the power to produce the mosaic disease when rubbed on the leaves of healthy tobacco plants. At least 135 separate plant viruses have been described. Mankind and the lower animals also are afflicted with virus diseases which cause an incalculable amount of suffering and loss of life. Some of these are smallpox, yellow fever, influenza, infantile paralysis, measles, mumps, chickenpox, epidemic encephalitis, rabies, the common cold and psittacosis. Animals suffer from such virus diseases as dog distemper, swine fever, foot and mouth disease, psittacosis, fowl plague, fowl pox, pigeon pox and canary pox.

A millimicron is a millionth of a millimeter. The smallest virus yet measured is that of foot and mouth disease, which measures only 10 millimicrons in diameter. The largest virus yet measured is that of psittacosis with a diameter of 275 millimicrons. The size of the viruses may be measured by filtering them under pressure through a series of membranes made of especially prepared collodion. By measuring the size of the pores in the membrane, the size of the viruses may be determined. Some viruses have even been photographed by using single wave lengths in the ultraviolet spectrum and a special type of microscope fitted with quartz lenses.

Viruses can be rapidly destroyed by certain physical and chemical agents. Drying will destroy some viruses, but others, such as that of foot and mouth disease and yellow fever, will withstand drying. The virus of mosaic tobacco disease may remain infective in the dried state for several years.

American investigators have shown that some viruses can be precipitated out of suspension by the addition of certain chemicals, and they believe that the virus behaves like a chemical substance rather than a living organism.

Disease producing viruses are transmitted in various ways. The yellow fever virus is transmitted from person to person through the bite of a mosquito; experimentally it can be transferred also to monkeys by rubbing the skin with a glass rod dipped in the virus. The virus of rabies is spread in nature through the bite of a rabid animal. The details of transmission of all viruses are not fully understood.

Spontaneous variations of viruses are thought to occur at times, thus making possible new viruses and new virus diseases. A few years ago an entirely new virus disease known as tomato bush stump suddenly appeared among the tomato plants of a Bristol grower. This disease had never been described before and except for a few attacks in the following years, has never been reported since. The virus, however, has been preserved in research institutions and has been purified in a crystalline state.

Efforts are being made in some research centers at present to develop a vaccine against influenza, a difficult task because of the many different strains of influenza virus. A vaccine has been produced against foot and mouth disease, which is being carefully tried out

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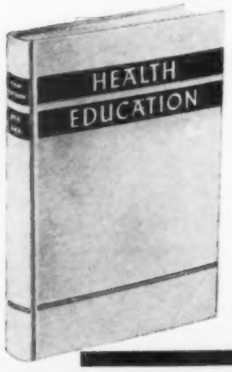

By the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association with the Cooperation of Advisory Committees.

AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street, Chicago

on a small island off the coast of Rügen in Germany. A vaccine has been produced against distemper in dogs. Methods are being developed to prevent some of the virus diseases of plants by a process analogous to vaccination.

The complete control of virus diseases is one of the great problems confronting medical research. Some phases of this problem have been the subject of intense research for many years without any final degree of success. This is true of research on the common cold. Eventually, means of protection against these diseases will be discovered and made practical.

J. F. Hammond, M.D.

Habits, Healthful and Safe
Health Secrets
A Sound Body
Growing Up Healthily
All Through the Day
Let's Be Healthy
Healthful Ways
Through the Years

By W. W. Charters, Ph.D., Dean F. Smiley, M.D., and Ruth M. Strang, Ph.D. Cloth. Illustrated. New York: The Macmillan Company, 1941.

This series of books on personal hygiene and accident prevention for children is carefully graded for different ages. The first book, which is devised for first grade readers, presents in story form fourteen different health habits, including cleanliness, proper eating habits, care of the teeth, and sleep and rest. Also by the story method, it emphasizes six character traits: cheerfulness, punctuality, courtesy, obedience, kindness and neatness. The succeeding books are organized with increasing complexity up to the eighth grade, which is for pupils who have reached the eighth grade ability level. In "A Sound Body," continued emphasis is placed on nutrition, safety, care of the teeth and other aspects of personal health. In addition, a considerable amount of elementary anatomy and physiology is introduced. Throughout the first four books of the series, a story-like form is generally followed. These four can apparently be read with interest by at least one 8 year old girl in the third grade. There is no sacrifice of accuracy and little preaching throughout the series. If not taken in too large doses by the individual child, it should be possible, at the end of the eighth grade, to leave the child with considerable information on personal hygiene and on elementary anatomy and physiology. Books of this type represent an enormous improvement over those which were available a generation ago.

E. P. Jordan, M.D.

Preface to Eugenics

By Frederick Osborn. Cloth. Price, $2.75. Pp. 312. Illustrated. New York: Harper & Brothers, 1941.

This volume serves to introduce the Harper's Social Science Series. There are many who believe that the only hope for mankind in the future is the practice of eugenics. Already men and women are practicing control of birth as never before in history. Eugenics is no longer a theory—it is being practiced. It is fortunate, then, to have a book by a recognized authority, setting forth what science knows about heredity as a factor in individual differences among human beings, and to have the views of Professor Osborn as to what we may hope to accomplish by the practice of eugenic procedures. Basic to every aspect of the subject is the necessity for more research to answer many unsolved questions. The thesis with which Professor Osborn concludes is as follows:

"Democracy is therefore the necessary safeguard of eugenics. But on the other hand, it is doubtful whether democracy can long continue in any society except one so set up that the more competent people in every social and occupational group are favored for survival."

The book is a thought-provoking volume, providing succinctly much important data. The place of the physician in the social scheme makes it necessary for him to be fully informed on the matters that are here discussed. M. F.

NOTICE

Books reviewed in this section should be ordered from booksellers or direct from the publishers. They may not be secured through Hygeia or the American Medical Association, unless published by this organization. The following list contains the complete addresses where the publishers mentioned in these reviews may be reached:

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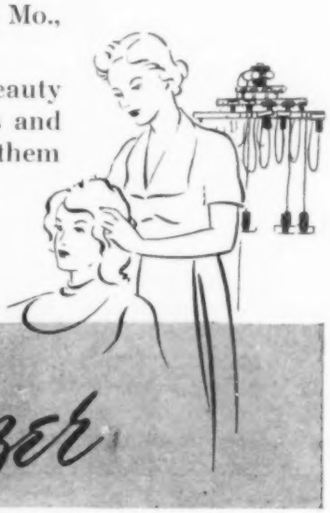

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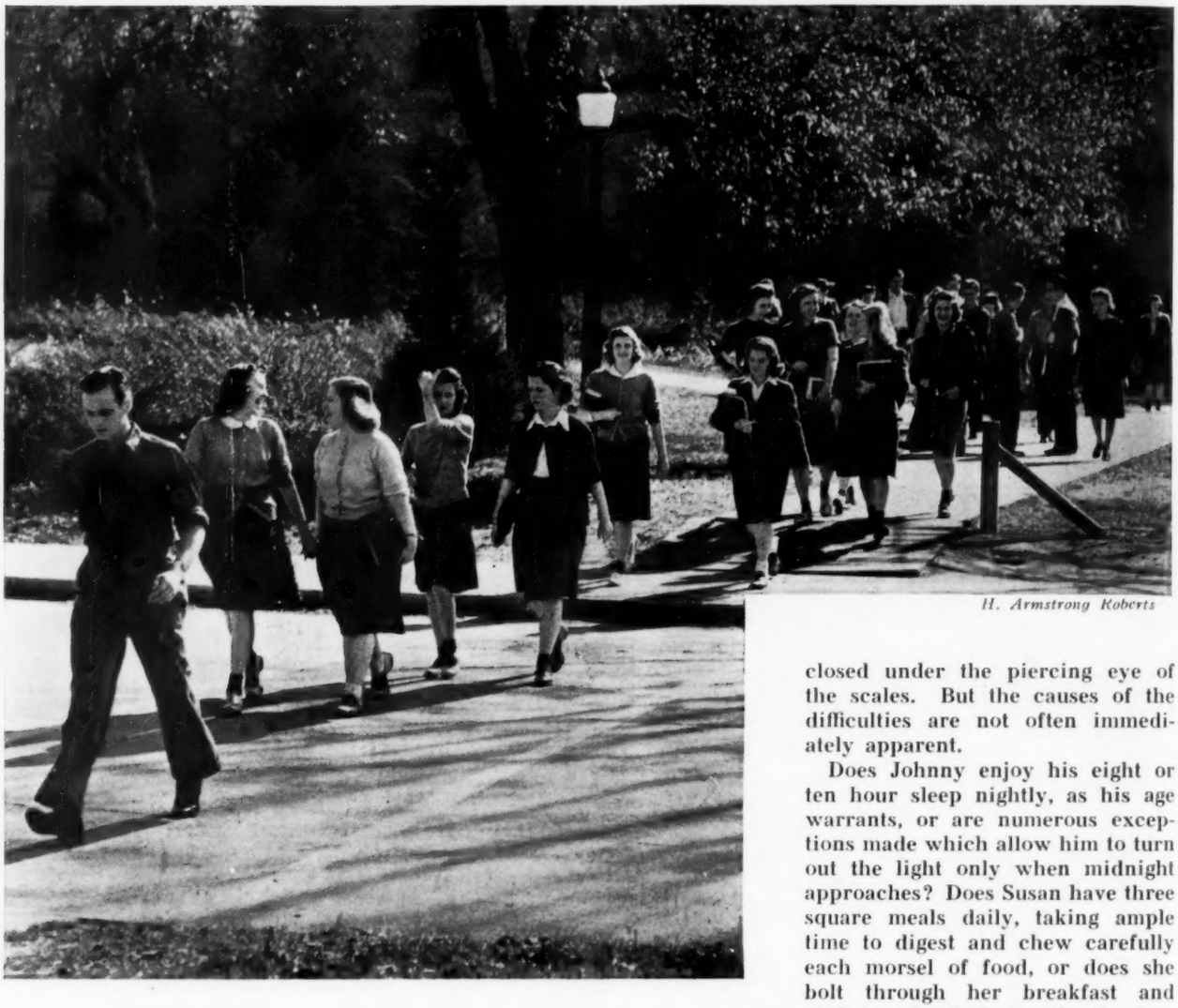

H. Armstrong Roberts

Back to School Again

By EUGENE A. CONKLIN

IS YOUR CHILD a "terrible tornado" or a model pupil in the classroom? Does he stand at the head of his class, or is she at the foot of her's? Are your son's report card markings a brilliant red or a satisfactory blue? And does your daughter's standing in Algebra spell trouble whenever the family and she get together? Is your child a shining success or a conspicuous failure in modern school life? To find the correct answers to these and other perplexing queries would color any Mother's hair prematurely.

Physical health, mental health, self-reliance and initiative are all-important characteristics for your boy or girl to possess. Of these, physical health far outranks the others. The Latins who expressed the belief that a sound mind dwelt in a sound body were not far from the truth. True, every pupil receives a semi-annual physical checkup which reveals such glaring defects as eye-strain, faulty hearing, infected tonsils, or any one of the numerous symptoms which reflect physical weakness. Overweight and underweight conditions are disclosed under the piercing eye of the scales. But the causes of the difficulties are not often immediately apparent.

Does Johnny enjoy his eight or ten hour sleep nightly, as his age warrants, or are numerous exceptions made which allow him to turn out the light only when midnight approaches? Does Susan have three square meals daily, taking ample time to digest and chew carefully each morsel of food, or does she bolt through her breakfast and dash to school, the result of a too-late awakening? Indigestion is no laughing matter, and youthful stomachs act up when subjected to continual misuse.

Is your child out of doors a substantial portion of each day after school is over? An hour spent in football, basketball, baseball, or even tennis, with just plain hiking, hunting or fishing thrown in for good measure each and every day will put your child in top physical condition, if adequate diet and rest are also included.

Above all, don't wait for the school doctor to make his diagnosis. Take your child to your physician twice yearly for a complete physical checkup: at beginning of school and during mid-term vacation. Thus, ailments can be conquered without that five or six week delay which occurs when the school examination is awaited. If there's nothing wrong, you'll be relieved,

and at least one of the common causes of school difficulties will have been removed.

Mental health is a vastly different commodity. A growing child's brain is constantly shifting and changing, and impressions gathered during youth are many and complex. If Johnny is a tantrum-thrower at school and refuses point-blank to study or even passively remain quiet while his classmates master their lessons, the cause may lie rooted in an inferiority complex, which, in turn, may have sprung from home conditions.

For example, Burt, a 10 year old, was one of five children in his immediate family. He wore whatever clothes were passed down from grownup brothers. Occasionally, he received a small allowance if his older brothers and sisters did not need funds. His mother and father were too busy to devote much time to their youngest member of the family, and he became convinced that all his life he would be the least favored child. As a result, he grew morose and developed into an acute problem child.

Dick was another such person. The only child in his household, his mother had desired a girl instead. Not being aware of the sensitive nature of a growing boy, she lost no chance to exclaim, "Why on earth couldn't you have been a girl so you could help me around the house?" Instead of teaching him the comparatively simple operation of the vacuum cleaner, and the mechanics of washing, wiping and stacking dishes, she deluged him with criticism. Result: another even more acute problem for school authorities to attempt to solve.

Eight year old Doris simply could not master sports and hence had few friends. She could always be relied on to run the wrong way or score a point for the opposing team through poor team-work. Left out of activities, snubbed by athletically minded friends, she became discouraged and her work suffered alarmingly.

In each case the remedy lay with the parents and the school, working in close harmony. Efforts on the part of the school's physical instructor soon gave Doris ability in comparatively noncompetitive and individual games such as bowling, lawn tennis and archery.

Part time employment was found for Burt with a paper route. By meeting his customers, making enough to buy his own clothes and pay for his own amusements he was able to establish his economic independence and create a healthy mental attitude.

Dick's Mother, after an interview with the instructor, determined to offer constructive suggestions to her boy concerning odd jobs about the house, instead of bewailing an act over which neither had control.

There may be other causes: too frequent quarrels between parents at home, or a broken household, due to divorce and separation, are two of the major factors. But wise parents watch their children closely and keep a constant watch over their mental moods.

Self reliance, the third necessary ingredient for a successful scholar, means simply the ability to walk on one's own feet.

Children should, within limits, choose their own clothing, perform

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simple household duties which require little skill, and understand that tattle-tales went out during the last decade. No boy or girl will be popular if he or she cannot make decisions now and then, and if their particular battles cannot be fought without parent or teacher acting as referee. For after all, completing a geography lesson or a social science assignment without recourse to a friend's notebook and aid is self-reliance in its simplest form. And making a speech before an assembled crowd of fellow students, without having a bosom friend compose it entirely, requires faith in one's self and one's ability.

The fourth characteristic is initiative. When the porch door needs repairing, does Johnny, of his own accord, procure the tools and set to work? Does Jennie, when she realizes that an important party is scheduled for that evening, and she has nothing suitable to wear, go ahead on her own and fix over an old party frock, without waiting for some one else to suggest a solution? If your child has initiative at home, chances are that school will find him the same way. He'll do an extra page of spelling, if he has time left over in his study period. And she'll put an extra border on that apron she's making, if there's time left, instead of being profoundly bored.

There are many other important qualifications for a successful scholar. But if your child possesses only these four major traits, you may well be pleased with the success of your home training.

Diabetes and Feet

(Continued from page 689)

of the feet are almost always due to carelessness and ignorance on the part of the patient and can be avoided by realizing the seriousness of their nature and by obtaining appropriate medical care immediately.

The important things for the diabetic patient to remember are the following:

(1) No smoking.

(2) Keep the feet warm by means of woolen hose, warm underwear and a daily hot bath.

(3) Watch the spaces between the toes for signs of infection. If you are doubtful, see your doctor at once. Do not apply home remedies.

(4) Do not cut corns, calluses or toenails. Have this done by either your physician or by an expert chiropodist or by some member of the family especially instructed.

(5) Do not use baking lamps, heating cradles, hot water bottles, electric pads or any other form of external heat on your feet.

(6) Do not wear tight fitting shoes, or shoes with worn insides that may cut or scratch the feet.

(7) At the first suspicion of anything unusual in the feet see your doctor without delay because it is only in the early stages of these complications that treatment is beneficial. Neglect of even the slightest symptom may result in eventual loss of a limb.

NEW TREATMENT FOR BURNS

A method of treating certain types of burns, involving the application of a paste composed of sulfonamide, glycerin and cod liver oil, which overcomes the disadvantages of the tanning methods, such as with tannic acid, is reported in the *British Medical Journal* by J. M. Robson and A. B. Wallace.

The treatment of burns with this paste allows early movement, the two men say. Most of the burns treated by them have been of the second degree and have occurred in children. The hands, face, abdomen, buttocks and feet responded well and as a result an early healing surface was obtained, patients thus being discharged earlier from the hospital. They say that the rate of healing with the paste, which they call "euglamide," compared favorably with that obtained from tannic acid. The results of treating a few burns which involved the whole skin have been promising, they declare.

The Job's Yours

(Continued from page 698)

has plenty of energy left for fun outside of working hours."

As they turned to leave, Don thought of one more question: "May I ask about the young woman I saw at one of the typing desks in the main office? She had a pair of crutches. Since you are so careful about physical examinations, I didn't suppose that a handicapped person could get a job here."

"That's where you are wrong, Don," Dr. Todd explained. "That young woman is one of our best typists. She is handicapped because she can't walk without her crutches; but no one ever thinks of that. She's never absent and is one of our most efficient and dependable employees.

"We have a great many positions filled by people who are physically handicapped. They, even more than unhandicapped persons, have learned rather forcefully the value of keeping themselves in good health. Of course, we place such persons in positions best suited to their physical abilities."

As Miss Fiske and Don walked through the various shops and stockrooms, they talked with the persons in charge. They discussed the special arrangements which had been made to improve working conditions—this meant increased and improved production for the company and more pleasant conditions for the workers. These included special lighting facilities and various devices for comfort and safety.

"Here's something else that will interest you," Miss Fiske suggested, as a pushcart, filled with bottles of milk, was wheeled toward them.

"This is our milk service. We have it twice a day, mid-morning and mid-afternoon, for all employees who wish to drink milk during their rest periods. It gives them the 'pick-up' they need between meals."

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"Notice how many take advantage of it."

Don and Miss Fiske helped themselves to bottles of milk and, when they had finished, went on to the cafeteria.

As they stepped from the elevator on the top floor, they were met by a glimpse of sunshine and blue sky from the windows of the cafeteria and by a wave of enticing odors from the kitchens.

"Some of our employees bring their lunches with them," Miss Fiske explained. "But we encourage them to purchase at least one serving of hot food. Everything is sold to them at cost."

As Mrs. Barton, the dietitian, showed them through the kitchens, Don plied her with questions about her part in the company's health program.

"I try to plan the menu so that each person can have a square meal —milk, a fruit, or vegetable, and at least one other substantial food. Of course, we encourage them to eat additional foods, too, especially those people who are doing heavy work and need the extra energy.

"We, as dietitians, are continually reminding every one that he needs a glass of milk at every meal, and proper amounts of eggs, vegetables, fruits, whole-grain cereals and meat every day. I tell our employees that the more of these foods they get in their noon meal, the more certain they can be that they will get all the food elements they need during that day."

Finally, Miss Fiske interrupted, "I'm afraid you're making Don and me hungry for lunch, Mrs. Barton."

"That's right," Don added. "I'll be back for that square meal just as soon as I can."

While they were waiting to take the elevator to return to Mr. Bryant's office, Don became interested in a colorful poster announcing an employees' bowling tournament.

"This afternoon you will probably meet Mr. Walters. He has charge of the recreational facilities in which we are all invited to take part. We have lots of fun with our bowling teams, basketball teams, choral clubs, softball teams and at our dances."

"Is there a swimming club?" Don asked, thinking of his own favorite sport.

"Two," answered Miss Fiske, laughing. "I belong to one of them."

On Don's return, Mr. Bryant greeted him by asking him what had interested him most.

"The milk service," Don answered. "Probably because I was hungry," he added, laughing. "I've never worked any place before where I could have milk between meals. I remember only too well how hungry I used to get on the job. I'd feel as if I couldn't possibly do another minute's work. Milk would certainly have given me back my pep—and in a hurry."

Mr. Bryant answered, "That's what we call industrial fatigue."

Then he explained to Don that the need for replenishing energy through extra food was an experience common to all working people.

A large number of employers provide rest periods. Many find that food in addition to rest helps in the prevention of fatigue while working. Employers also find that workers who have food at regular times between meals do better work than those who do not.

"In a recent experiment a group of clerical workers had fruit and milk in the middle of the morning and afternoon. They felt better at the end of the day, made fewer mistakes and their associates even commented on their improved dispositions.

"From all of the observations on the health of many groups of employees," Mr. Bryant concluded, "we are discovering that all these big problems of safety, efficiency, fatigue and health—whether on a job or away from it—are tied together in the one answer: proper nutrition."

Throughout the morning Don had been sincerely impressed by the overwhelming evidence which had been presented to him about the apparent need of good general health for all people who work. "How useless all other preparation for work is, if a young man or woman lacks good health," he said.

Mr. Bryant smiled. "You have found the cornerstone of vocational success. But enough of this, I know that it's past your lunch time and mine. Mrs. Barton will be expecting you to eat one of her famous 'square meals.' "

"Yes," said Don laughing, "I feel quite equal to eating mine—meat, vegetables and plenty of milk."

"Fine," answered Mr. Bryant as they left his office, "The Job's Yours."

Prehabilitation of Registrants: II

(Continued from page 695)

of thyroid substance. Such treatment, naturally, should be taken only under medical supervision.

DEGREES OF ANEMIA

Anemia may result from excessive and repeated nose bleeds, or the continued loss of blood from piles or from bleeding elsewhere in the body. Consult your physician. By the use of simple measures for stopping hemorrhage by diet rich in iron and by liver products, the blood may be effectively restored to its original amount, richness and color. By ridding yourself of a mild anemia, you may restore yourself to a healthful vigor.

RECENT ACUTE INFECTIONS

Colds, sore throats and attacks of grip or of bronchitis may temporarily undermine your strength and health and render you temporarily disqualified for examination and unfit for service. Have your family physician give you the necessary treatment, ask him to have your physical examination postponed until you have made a satisfactory recovery. Remember that most acute infections are fleeting in nature, and a week's treatment will often result in a complete return to normal health. Wait until you are well and fit before applying for examination.

PILES

If you suffer from itching or pain in the rectum accompanied by blood in the bowel movement and on the toilet paper, consult your doctor. By a few simple directions, he may be able to inform you how to keep the stool soft, how to attain the necessary gentleness in cleaning the parts, and what ointment or suppositories should be used.

SKIN LESIONS

Acne: If you suffer from pimples on the face, neck and shoulders, see your doctor about the proper care of the skin. Under the proper management, these blemishes may quickly disappear or improve at least to the points that the acne is no longer disfiguring.

Rashes: A rash covered by white scaly patches (psoriasis) over the knees and elbows or elsewhere over the body may be readily cured by your doctor through the use of sunshine and appropriate preparations. See him for necessary directions for the treatment of this disease, and also for the management of other skin rashes, such as ringworm and itch, both of which may yield quickly to proper management.

Certain unsightly scars, moles or warts on the face or exposed areas of the skin may be removed by one means or another, or be helped by small doses of x-ray. Your physician can advise you in each instance.

PILONIDAL CYST

This condition is marked by a small painful point or lump usually appearing in the vicinity of the lower tip of the back bone. Such a lesion may open and discharge pus or hair and even other matter. If you suffer from such trouble, see your medical adviser. He may need an x-ray examination to determine the seriousness of the condition. In many cases, these cysts are easily remedied by operation.

DECALOGUE OF HEALTH

Work diligently, regularly and to the utmost of your capacity. Obtain sufficient relaxation and sleep.

Early to bed and early to rise is still sound health advice.

Exercise daily, enough to keep your muscles strong and your body firm and healthy. Cultivate both a good posture and a good gait.

Eat daily a well-balanced diet, according to your needs. Eat regularly, slowly and masticate all food thoroughly.

Keep your bowels regular by proper attention to food, exercise, and habits.

Keep your teeth clean, brush them morning, night and after each meal.

Keep your body clean by adequate bathing and daily care.

Keep your mind free from fear, alert and cheerful by looking always on the bright side of things. Do not indulge in useless worry.

Cultivate confidence in yourself and in your work.

Be temperate. Avoid drunkenness, gluttony, venery and slothfulness.

As a registrant you should carefully consider this advice, relative to the major benefits to be derived from the removal of minor defects and from the adoption of the health suggestions. Remember that trivial causes may result in dire consequences, and that an insignificant beginning may result in a fatal outcome. The consideration of greatest importance is that the early correction of minor defects may prevent the development of serious diseases and major tragedies.

Next Month: Dental requirements and advice.

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Medical News

OF THE MONTH

New Test for Varicose Veins

A test that determines within two minutes whether the branches of the veins connecting varicose veins with each other are functionally adequate is reported in *The Journal of the American Medical Association* by Gerald H. Pratt, New York. The test is valuable in that it indicates whether and at what point a communicating vein will have to be tied or shortened by surgically resecting part of it.

Food Poisoning Due to Cadmium

Four outbreaks of food poisoning due to contamination with cadmium (a metal used in plating alloys) are reported in *The Journal of the American Medical Association* by Samuel Frant and Irving Kleeman, New York, who advise that "No utensils to be used in the preparation or dispensing of food or drink should be permitted to be plated with cadmium. In every basic state and municipal public health law relating to the manufacture and preparation of food there should be a provision for this control. In addition, in order to provide full protection throughout the country, there should be federal regulations prohibiting this practice in interstate commerce."

The authors also advise that "Health officers and manufacturers of utensils for food should be made cognizant of the syndrome [a group of symptoms occurring together] of poisoning with cadmium and the necessity for restricting the use of this material. It is especially important today that the plating industry, searching for substitutes for tin and other valuable war materials, be cautioned that cadmium is not a suitable substitute in the plating of utensils for food. New York City has already taken these steps. The plating industry was called into conference and advised to discontinue the use of cadmium in utensils and dispensers for food. Subsequently, the sanitary code, which deals with all measures concerning the health of the citizens of the city, was amended to prohibit the use of cadmium in articles used in the preparation of food and drink. . . .

"A typical outbreak may be detected with ease if the characteristics of the syndrome are kept clearly in mind. The association of immediate food poisoning of groups with the ingestion of an acid liquid prepared in a metal container should cause suspicion, and an immediate investigation for the presence of cadmium-plated utensils should be made."

Gonorrhea

A warning that if considerable care is not exercised by both patients and physicians, gonorrhea may become an even greater problem than it was before sulfanilamide and its derivatives were introduced as treatment agents is made by Charles A. W. Uhle, Leroy W. LaTowsky and Frank Knight, Philadelphia, in *The Journal of the American Medical Association.*

"The rapidity with which the symptoms disappear and the discharge ceases creates a false sense of security in the patient," the three men say. "This applies to both the ignorant and the indifferent patient. The physician must take time to explain to his patient the vagaries of chemotherapy [drug treatment], so that at all times a mutual bond of cooperation will exist. Through the proper approach to the patient, with tact, understanding and interest in his case, the percentage of default in clinic work should be materially reduced. Those whom the physician cannot hold can be made to cooperate through the efforts of a competent social service department. If the social service department fails, a reminder from the state department of health or the services of the police department will accomplish the necessary result."

Malignant Bone Tumors

"We are firmly convinced that surgical operation offers the best method of treatment for the majority of primary malignant tumors [those likely to recur and eventually to destroy life] of bone," Henry W. Meyerding and Jorge E. Valls, Rochester, Minn., declare in *The Journal of the American Medical Association.*

Their conclusion is based upon a follow-up study of 424 such bone tumors encountered over a period of twenty-five years in which it was found that 22.9 per cent of the patients who had surgical treatment, such as amputation or wide excision of the involved area, survived for five years, whereas only 9.1 per cent of those not surgically treated survived.

In explaining the reasons for their study the two men say that "The practitioner of internal medicine rarely encounters primary malignant tumors of bone and is compelled to depend on large medical centers or on group studies for knowledge as to the value of different methods of treatment and prognosis. Study of the literature reveals a considerable difference of opinion as to the value of methods of diagnosis, treatment and prognosis. After studying this series of cases, we feel that we are able to draw valuable conclusions."

Sulfanilamide and Rheumatic Fever

Evidence that the maintenance of certain levels of sulfanilamide in the blood by means of administering small daily doses is effective in preventing hemolytic streptococcic infections and the consequent flare-ups of rheumatic fever in persons known to be subject to recurrences is presented in *The Journal of the American Medical Association* by A. F. Coburn and L. V. Moore, New York.

As a result of studies made on 100 patients, the authors say that it seems justifiable, therefore, to conclude that the absence of rheumatic recurrences in sulfanilamide-treated subjects which has been previously reported was due to the drug and not to a change in susceptibility. It is also clear that the prophylactic effect of sulfanilamide does not exert any beneficial effect beyond the period of treatment.